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# Illinois Environmental Protection Agency

## FACSIMILE TRANSMITTAL SHEET

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TO:

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FROM:

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MESSAGE:

Please Find ATTACHED ROD For  
IPC SITE.

**Record of Decision Summary  
Interstate Pollution Control Superfund Site  
Rockford, Illinois**

**I. Site Location and Description**

The Interstate Pollution Control Inc. site ("the IPC site ") is located in an industrial area in the south central part of Rockford, Winnebago County, Illinois north west of Magnolia Peoples Avenue. The National Superfund Wastelan Database identification number for the site is ILT180011975. The small (approximately 2.8 acre), irregularly-shaped site measures approximately 850 feet along the north boundary line and 270 feet along the east boundary line.

The Remedial Investigation/Feasibility Study ("RI/FS") of this former waste recycler/transporter site was conducted by the Potentially Responsible Parties ("PRPs") under the oversight of the Illinois Environmental Protection Agency ("Illinois EPA") (the lead agency). All RI/FS activity was funded by the PRPs and conducted consistent with a Partial Consent Decree with the State of Illinois.

During IPC's operation of the site it contained, at various times, at least six under ground storage tanks, one large above ground storage tank, an unlined surface impoundment, a gas fired incinerator, and several structures. IPC's operation at the site included transporting and bulking of waste oils, solvents and cyanide waste for incineration, resale and/or off-site disposal. Also during IPC's operation of the site support service was provided to two sister companies; a portable toilet business and a Roto-Rooter franchise. Prior to IPC's operations the site was extensively quarried and backfilled with various materials including a large quantity of foundry sand, following filling of the quarry and immediately prior to IPC's operations the site was the location of an auto salvage yard.

**II. Site History and Enforcement Activities**

The Illinois Environmental Protection Agency ("Illinois EPA"), U.S. Environmental Protection Agency ("U.S. EPA"), and other state and federal agencies began to investigate and evaluate the site conditions in 1979. In 1985, the U.S. EPA conducted a preliminary field investigation of the site and the adjacent Peoples Avenue Landfill and, in 1987, evaluated the site under the Hazard Ranking System ("HRS"). The Site received an HRS score of 46.01 and was placed on the National Priorities List ("NPL") on June 24, 1988.

In 1991, private parties negotiated a Partial Consent Decree with the Illinois EPA and the Attorney General of the State of Illinois. The Partial Consent Decree required that the private parties ("Respondents") undertake a Remedial Investigation/Feasibility Study ("RI/FS") at the site. The RI Work Plan was completed in 1992, and the field investigations were conducted in 1993-1994. The final RI Report was submitted in 1997.

Significant removal actions have occurred at the IPC site on two different occasions. The incinerator was removed between 1976 and 1979. Interstate Pollution Control, Inc. conducted a partial cleanup of the site in 1979 and 1980, in response to an Illinois Pollution Control Board Order. During this

*PER B.I.(md)*

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REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

2010300018/Whitney bag 6  
Rockford/Interstate Pollution Control  
Camp

REPLY TO THE ATTENTION OF

SR-6J

October 29, 2002

Mr. Clarence L. Smith  
Division of Remediation Management  
Bureau of Land  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, IL 62794-9276

OCT 30 2002

per B.I. (MD)  
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**Subject: Clarification of U.S. EPA's Position With Regard to the Record of Decision for the Interstate Pollution Control (IPC) Site in Rockford, Illinois**

*Clarence*  
Dear Mr. Smith:

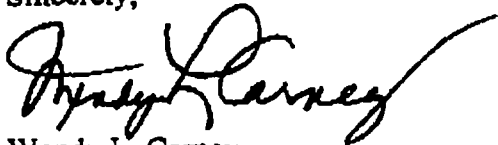
In September of 1999, the U.S. Environmental Protection Agency (U.S. EPA) reviewed the Record of Decision (ROD) for the Interstate Pollution Control (IPC) Site in Rockford, Illinois. The IPC ROD requires the implementation of Alternative #2, *Institutional Controls and Engineered Barrier*, and *Monitored Natural Attenuation of Groundwater*, with the Soil Vapor Extraction component of Alternative #3 maintained as a contingent remedial option. As described in the ROD, "the engineered barrier will be installed over the site to prevent direct contact with site contaminants, serve as an impermeable barrier to limit exposure to soil vapors, prevent fugitive dust emissions, and reduce storm-water infiltration through site fill, thereby reducing potential releases to groundwater." The ROD further explains that groundwater contamination beneath the IPC site will be remediated through monitored natural attenuation. A groundwater monitoring program will be implemented to "provide an indication of the effectiveness of the engineered barrier in preventing surface water infiltration and provide data to assess the rate of monitored natural attenuation of contaminants in groundwater." Quarterly and annual site inspections will be performed to ensure the integrity of the site fence and the condition of the engineered barrier and the monitoring well system. Groundwater data will be evaluated to gage the effectiveness of the remedy. If VOC concentrations do not decrease (and the lack of a decrease is not attributable to upstream sources), the implementation of a Soil Vapor Extraction system may be considered.

U.S. EPA supports the actions that were selected in the ROD for the IPC Site. However, U.S. EPA elected not to fully concur with the IPC ROD because of the identification of monitored

natural attenuation as the remedy for groundwater. U.S. EPA has determined that the IPC Remedial Investigation and ROD did not provide the necessary information to demonstrate that natural attenuation is occurring at the IPC Site. In addition, the ROD did not provide justification to show that the estimated cleanup time for groundwater (> 200 years) is reasonable when compared to an active groundwater treatment approach. However, U.S. EPA does not oppose the cleanup plan outlined in the ROD because U.S. EPA recognizes that the Illinois Pollution Control Board has the authority to manage areas of groundwater contamination by use of Groundwater Management Zones. The IPC Site is in an area of widespread groundwater contamination and is part of the Southeast Rockford Study Area. U.S. EPA agrees that, in conjunction with source control, it is acceptable to monitor and administratively manage the area of contaminated groundwater at the IPC site and between the IPC Site and the Rock River.

U.S. EPA expects that Illinois EPA will coordinate with the potentially responsible parties for the IPC Site and will proceed with implementation of the remedy. Please contact me at (312) 353-6553 if you have any questions concerning U.S. EPA's position on the IPC ROD.

Sincerely,



Wendy L. Carney  
Chief, Remedial Response Branch #1  
Superfund Division

cc: T. Van Donsel, SFD  
C. Melodia, ORC  
T. Ayers, IEPA

**Declaration for Record of Decision**  
**Statutory Preference for Treatment as a**  
**Principle Element is not met**  
**and Five Year Site Review is Required**

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OCT 14 1998

**GOVT. & COMMUNITY AFFAIRS**  
**ILLINOIS EPA**

**Site Name and Location**

Interstate Pollution Control  
Rockford, IL

**Statement of Basis and Purpose**

This decision document presents the selected remedial action for the Interstate Pollution Control site, in Rockford, Illinois which was chosen in accordance with the Comprehensive Environmental Response and Compensation Act ("CERCLA"), as amended by the Superfund Amendment and Reauthorization Act ("SARA") and, to the extent practicable the National Contingency Plan. This decision is based on the administrative record file for this site.

The U. S. Environmental Protection Agency concurs with the selected remedy.

**Assessment of the Site**

The response action selected in this Record of Decision is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

**Description of the Selected Remedy**

This is the final action for the site. This action will address soil contamination and sources of continuing groundwater contamination. This action addresses the principal threat remaining at the site by capping contaminated soils preventing further migration of contaminants to groundwater, placing institutional controls on future uses of the site and, monitored natural attenuation of contaminants currently in the groundwater. As institutional controls and natural attenuation are key components of the remedy long-term management and monitoring of the site will be required.

**Statutory Determinations**

**Part 1: Statutory Requirements** - The Selected Remedy is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to the remedial action, is cost-effective, and utilizes permanent solutions and alternative treatment (or resource recovery) technology to the maximum extent practicable.

**Part 2: Statutory Preference for Treatment** - The remedy does not satisfy the statutory preference for treatment as a principle element of the remedy for the following reasons:

a) The largest quantity of material containing hazardous substances at the site is foundry sand fill which is not amenable to in-situ treatment and has been found to be technically impracticable to remove for ex-situ treatment or off-site disposal.

b) The fill contains a limited quantity of solvents (less than 2,000 pounds) distributed at relatively dilute concentrations. The solvent-contaminated fill, which would be amenable to the presumptive remedy of Soil Vapor Extraction ("SVE"), contains solvents at concentrations which are not believed to present a threat to groundwater following construction of the containment (i.e. impermeable barrier) remedy. Verification that the solvent contaminated fill is not a continuing contributor of contaminants to groundwater will be a component of the five year review. *PER (BI)*

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c) Soil Vapor Extraction as a component of a final remedy carries the risk of inducing landfill gas migration into the IPC site from the adjacent Peoples Avenue Landfill. While this potential landfill gas migration is believed to be manageable this Record of Decision defers implementation of the SVE component of the remedy until the cap component is in place and functioning. Deferral of a final decision as to implementation of the SVE component of the remedy to the five year review will allow for adequate assessment of the landfill gas threat and more accurate costing of the SVE component considering potential landfill gas effects on the SVE emission control equipment and / or the engineering feasibility and cost of precluding landfill gas migration.

**Part 3: Five-Year Review Requirements** - Because this remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within five years after initiation of remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

### **ROD Data Certification Check List**

The following information is included in the Decision Summary section of this Record of Decision. Additional information can be found in the Administrative Record file for this site.

- Chemicals of concern and their respective concentrations
- Baseline risk represented by the chemicals of concern.
- Cleanup levels established for chemicals of concern and the basis for these levels.
- How source materials constituting principle threats are addressed.
- Current and reasonably anticipated future land use assumptions and current and potential future beneficial uses of groundwater used in the baseline risk assessment and ROD.
- Potential land and groundwater use that will be available at the site as a result of the Selected Remedy.
- Estimated capital, annual operation and maintenance (O&M), and total present worth cost, discount rate, and the number of years over which the remedy cost estimates are projected.
- Key factor(s) that led to selecting the remedy (i.e. describe how the Selected Remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting criteria key to the decision).



Signature (Director, Illinois EPA)

9.28.99

Date

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Signature (Assistant Administrator / Regional Administrator)

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partial cleanup of the site several bulk tankers containing wastes, approximately 180 yds<sup>3</sup> of material from the surface impoundment, and approximately 120 yds<sup>3</sup> of cyanide contaminated were removed. Reportedly, 1200 drums of contaminated materials were also removed from the Site during this cleanup. The surface impoundment was backfilled and graded.

On August 6, 1991, the U.S. EPA issued a Unilateral Administrative Order ("UAO") to IPC and a group of potentially responsible parties ("Respondents") to conduct additional removal activities at the site. Beginning in 1992, the Respondents to the UAO fenced the site, removed over 1,400 tons of solid and hazardous waste (including visibly stained soils), demolished and removed all above-ground and underground tanks and significant physical structures, installed a clay cover over the former impoundment, and substantially cleared the site

These removal actions eliminated more than 2.9 million pounds of solid and hazardous waste. These materials constituted principal threats at the site, and were removed, treated, destroyed or disposed of prior to the initiation of the RI/FS.

### **III. Community Participation**

The RI/FS Report and Proposed Plan for the IPC site in Rockford, IL were made available to the public in July of 1999. They can be found in the Administrative Record file and information repository at the Illinois EPA's Bureau of Land division file in Springfield, IL and at the Rockford Public Library, 215 North Wyman St. Rockford, IL. The notice of the availability of these two documents was published in the Rockford Register Star on July 9, 16, and 23, 1999. A public comment period was held from July 10 to September 10, 1999. An extension to the public comment period was requested. As a result, the comment period was extended to September 17, 1999. In addition, a public hearing was held on August 10, 1999 starting at 7:00 PM at the Holley Center, 2000 Christina Street in Rockford, IL to present the Proposed Plan to a broader community audience than those that had already been involved at the site. At this hearing representatives of the Illinois EPA answered questions about the remedial alternatives and the preferred option presented in the Proposed Plan. Illinois EPA's response to the comments received during this period is included in the Responsiveness Summary, which is part of this Record of Decision ("ROD").

### **IV. Scope and Role of Operable Unit or Response Action**

The remedial action described in this ROD addresses remaining soil and groundwater contamination at the site. Soil contamination at the site poses a current and potential risk to human health because U.S. EPA's acceptable risk range is exceeded for dermal contact with soils, ingestion of soil, inhalation of dust, inhalation of contaminants which can volatilize to air, and concentrations of contaminants in groundwater are greater than the maximum contaminant levels for drinking water. This action presents the final response action anticipated for the site and addresses the principle threats by installation of an impermeable barrier over the site, placing institutional controls on future site uses, reinforcing existing city and state groundwater use restrictions, and addressing groundwater contamination resulting from this site by implementation of a monitored natural attenuation program.



## V. Site Characteristics

The site is located in an area that has been heavily industrialized since the turn of the century. Historic industrial activities in the area include metal casting, plating, machine tooling, textile manufacturing, leather tanning and printing operations. Aerial photographs and maps from the early to mid-1900s indicate there were several major quarries in the site vicinity. Most of these quarries have since been filled. A 1918 topographic map indicates a quarry existed beneath most of the IPC site. Later aerial photographs show those portions of the quarry under the site being completely filled by 1943.

The closest residential area to the IPC site is located approximately 600 feet to the north (hydraulically up-gradient to cross gradient of the site). Other residential areas are located approximately 2,700 feet to the east of the site, and 2,300 feet to the southeast. Blackhawk Park is located approximately 700 feet to the northwest of the site. None of these areas has been impacted by the IPC site. Please see the attached map entitled IPC Site Area for a better understanding of the site location and to support the following discussion of the regional environmental setting.

The IPC site is surrounded by significant industrial facilities. The Gunite Foundry, located northeast of the site, has been in operation for at least 80 years. A pond located immediately north of the IPC site had been used by the foundry for the discharge of storm water and cooling water from casting operations. At the time of the RI field activities, the pond was still receiving some discharge from the Foundry and contained a considerable volume of water. Since that time, an independent waste disposal company has acquired the property, and the foundry stopped discharging to the pond. The disposal company has been using the property to store construction equipment, and has been slowly filling the pond with what appears to be construction debris. The pond is now dry, and the east half of the pond has been filled level with surrounding grade. The RI Report documents the current status of the pond, which can no longer be considered a significant environmental feature. Consequently, the former pond does not warrant further discussion.

A former pet food plant, located immediately southwest of the site, processed meat and produced pet food from the turn of the century until the 1980s. Several areas on the property may have been excavated and then filled with solid fill materials.

The Peoples Avenue Landfill is located immediately southeast and south of the site. This property was originally a sand and gravel quarry. The City of Rockford (the City) used the quarry for waste disposal from 1942 until 1972, receiving residential, commercial and industrial wastes. Methane gas generated by the landfill was detected in the basement of the adjacent pet food plant (venting pipes constructed later within the landfill alleviated the gas problem at the plant).

In 1957, the City installed a public supply well (Municipal Well No. 14) near the southeast corner of the Peoples Avenue Landfill. This well was abandoned in 1971 (prior to the start of IPC operations) because of deteriorating water quality (significant increases in chloride, manganese, sodium, ammonia, alkalinity, hardness and dissolved minerals). The deteriorating water quality was attributed to the landfill. Furthermore, the pet food plant had four wells prior to 1966. In 1965, taste and odor

problems became apparent in the well water. The deterioration in water quality was believed to be the result of contamination by the adjacent Peoples Avenue Landfill.

The former Mattison Machine Works is located approximately 1,000 feet northeast (i.e., up-gradient) of the site. Illinois EPA records indicate that perchloroethylene (PCE) is present in groundwater beneath the facility. Ongoing monitoring by Mattison Machine Works indicates that a plume of volatile organic compounds (VOCs), including PCE, trichloroethylene (TCE), and 1,1,1-trichloroethane (1,1,1-TCA), is passing beneath the Mattison property from another up-gradient source. The maximum detected VOC concentrations included PCE at 10,600  $\mu\text{g/L}$ , TCE at 1,500  $\mu\text{g/L}$ , and 1,1,1-TCA at 800  $\mu\text{g/L}$ . It is important to note that these concentrations are significantly greater than the concentrations of these same constituents in groundwater beneath the IPC site.

Of particular relevance to the remedial action described in this ROD is the fact that the IPC site is encompassed by the much larger Southeast Rockford Study Area. The Southeast Rockford Groundwater Contamination ("SER") site began with the discovery of VOCs in groundwater within a residential area of nearly two square miles. That discovery prompted the U.S. EPA to ultimately extend water mains and connect 526 residences to City water at a cost of approximately \$4 million. The SER Site was then added to the NPL. After further Illinois EPA study, the SER Site was expanded to a ten square mile study area ("SER Study Area") which incorporates almost 20% of the City and includes the IPC site (see the attached IPC Site Area figure). Studies have since indicated the widespread presence of chlorinated solvents in groundwater within this ten square mile area, in concentrations varying from less than 10 ppb to over 10,000 ppb. As a result of the widespread groundwater contamination, the City closed several municipal wells in this general area.

On September 29, 1995, the Illinois EPA issued a Record of Decision ("ROD") which addressed groundwater contamination at the SER Site. The ROD defined the SER Site boundary as the area within the 10  $\mu\text{g/L}$  contour line of the main VOC plume (approximately 1200 feet southeast of the IPC site at the closest point). It must be noted, however, that the Illinois EPA and the U.S. EPA had not independently investigated groundwater conditions in the general up-gradient vicinity of the IPC site which, as noted earlier, exhibit elevated concentrations of VOCs.

Within the SER site, the Illinois EPA selected groundwater use restrictions as the appropriate groundwater response action. The selected response action includes groundwater monitoring for at least 205 years, installation of water mains in the affected areas, connecting additional residences and businesses to City water, and implementation of institutional controls. The Illinois EPA stated that, with this groundwater response action, contaminants would be removed from groundwater by natural attenuation. The City of Rockford is pursuing a tax program to assume the responsibility to address groundwater concerns area wide. This program includes institutional controls on groundwater use and operational components of water treatment to remove VOCs from city water.

The IPC site is located approximately 1,600 feet east of the Rock River, outside the limits of the 500-year floodplain. The site is generally flat, and there is little runoff from the property. Most surface water (rainwater and snow-melt) accumulates in shallow puddles and eventually evaporates or

infiltrates into the subsurface soils. In areas surrounding the site, surface water drains to storm sewer catch basins.

Fill is present across most of the site and extends to depths of up to 46 feet. Most of the on-site fill consists of fine black sand believed to be foundry sand. The fill also includes wood, glass, concrete, brick and slag. Deposits of medium to coarse sand, and sand and gravel occur beneath the fill. These out-wash deposits extend to a depth of about 100 feet. Firm to very dense silt, clayey silt or silty clay layers are interbedded within the sand and gravel deposits in the site vicinity. The bedrock surface is approximately 150 to 200 feet below groundwater surface.

As the primary sources of contamination had been previously removed, as discussed in Section II above, the following conceptual site model for soils and groundwater was developed and used for the RI and carried through the Baseline Risk Assessment. Terrestrial and aquatic biota were not considered at risk from the site and were not carried forward. Surface soil, sub-surface soil, sediment in the adjacent quarry pit, and groundwater were investigated during the sampling portion of the RI which was conducted in 1993 and 1994. As no ongoing air releases were occurring at the site, but were possible during past operation of the incinerator, sampling of off-site surface soils was conducted to assess impacts; none were found. A total of 23 new or existing shallow and deep monitoring wells were utilized to assess site impacts on groundwater. The near-surface unconfined aquifer is the aquifer of concern; consequently, monitoring wells were not installed in the deep aquifers located below the confining silty stratum at this site. The general direction of groundwater flow is southwest to west southwest towards the Rock River. The groundwater flow velocity in the surficial aquifer in the site study area ranges from 0.75 to one foot per day (300 -400 feet per year). One of the most notable outcomes of the groundwater portion of the investigation was verification that a plume of chlorinated volatile organic compounds, at substantially higher concentrations than occur on site is approaching the site from the north east. This plume is expected to reach the IPC site in 15 to 45 years.

Exposure Pathways Quantitatively Assessed in the Baseline RA

Exposure Route	Potentially Exposed Population					
	Residents		Workers		Trespassers	
	Adult	Child	On-site	Construction	Adult	Child
Ingestion of groundwater	F	F	F	-	-	-
Inhalation of VOCs from groundwater	F	F	F	-	-	-
Inhalation of dust	F	F	C,F	F	C,F	C,F
Ingestion of soil	F	F	C,F	F	C,F	C,F
Dermal absorption from soil	F	F	C,F	F	C,F	C,F
Inhalation of VOCs in ambient air	F	F	F	F	C,F	C,F
C,F Indicates exposure is assumed under both current and future land use scenarios. F Indicates exposure is assumed only under future land use scenario. - Indicates not a complete exposure pathway for this receptor population.						

Specifically to assess contaminated deep and shallow groundwater impacts on the Rock River two (2) shallow and two (2) deep monitoring wells were installed down-gradient of the site, in close proximity to the river. Only vinyl chloride (maximum detected concentration - 6 ug/l) and manganese (maximum detected concentration 3240 ug/l) were identified at levels above MCLs. Neither of these contaminants could be fully attributed to the IPC site because of the close proximity and up-gradient location of Peoples Avenue Landfill and the nearly ubiquitous nature of these two contaminants in the Southeast Rockford area.

Groundwater supplies in Winnebago County are obtained from aquifers in both the glacial drift deposits and bedrock. Principal aquifers within the glacial drift are generally limited to major bedrock valleys with thick sand and gravel deposits. Although there are industrial and municipal wells which draw water from the drift aquifers, the Galena-Platteville bedrock formation is the primary source of potable groundwater for domestic use.

Water supplies delivered by pipe mains are available from the public utility for the entire IPC site RI study area, including the residences north of the site and Blackhawk Park. A well inventory indicates that all recorded wells located down-gradient of the site have either been abandoned or no longer exist and that there are no consumers of well water who might be impacted by groundwater contamination at the site and contamination originating up-gradient of the site.

No wetland areas are threatened as a result of IPC site activities or the groundwater plume which extends beyond the property boundary, and no other critical habitats have been identified. The ecological risk assessment concluded that contaminant levels detected at the site are unlikely to pose a high ecological risk to local flora and fauna; no adverse impacts were observed at the site during a reconnaissance; and no state or federal threatened or endangered species are likely to be affected by site contaminants.

Seventy three (73) chemicals of potential concern ("COPC"s) detected in site soils were selected for the risk assessment. These included 11 volatile organic compounds ("VOCs"), 29 semi-volatile organic compounds ("SVOCs"), 14 pesticide/PCB compounds and 18 trace metals, and cyanide. A total of 33 chemicals detected in on-site groundwater (shallow and deep) were selected as COPCs. These included 11 VOCs, 10 SVOCs, one pesticide/PCB compound, 11 trace metals, and cyanide.

The following table summarizes those COPC's found to be risk drivers in the risk assessment.

Risk Driving Chemicals of Potential Concern				
	Soil		Ground Water	
	Non-Carcinogenic	Carcinogenic	Non-Carcinogenic	Carcinogenic
Metals	Cadmium Chromium (VI) Copper Manganese	Arsenic Cadmium Chromium (VI) Beryllium	Manganese	Arsenic
Volatiles	1,1 Dichloroethane Trichloroethene	Chloroform Methylene Chloride  Vinyl Chloride	1,2 Dichloroethane Vinyl Chloride Acetone	1,1 Dichloroethane Tetrachloroethane 1,1,2 Trichloroethane Vinyl Chloride
PCBs/Pesticides		PCBs Heptachlor epoxide		
PolyAromatic Hydrocarbons (Semi Volatiles)		Numerous Di(2-ethylhexyl)phthalate		Numerous

There is no evidence to indicate that Resource Conservation and Recovery Act ("RCRA") listed wastes were handled at the facility during its operation and no characteristic wastes were left on-site following the previously discussed removal actions.

## VI. Current and Potential Future Site and Resource Uses

The IPC site is currently unused property zoned for general industrial use only. The site is secured by a chain link fence and locked gate with no on-site activity. The property is the subject of a Declaration of Restriction filed with the Winnebago County Recorder which contains the following pertinent language "The following restrictions are hereby placed upon the use of the aforesaid real property (also described herein as "the site") and shall run with the land, so as to prohibit to-wit: a) all residential development of the site; b) all public access to the site except for general industrial use; c) all unpermitted treatment, storage or disposal of waste on the site; and d) all uses of groundwater at the site; all of the above except as required by the Illinois Environmental Protection Agency or the United States Environmental Protection Agency." This Declaration of Restriction was filed March 10, 1995.

In addition to the above, the selected alternative would require additional Declarations of Restriction to include at a minimum the following: insurance of protection of construction workers during future on-site excavation or other penetrations of the impermeable barrier by requiring appropriate OSHA training of construction workers, appropriate and applicable health & safety plans during construction activities, compliance with Applicable or Relevant and Appropriate Requirements ("ARARs") relative to soil management, maintenance of the impermeable barrier and asphalt armor layer, and further obligating adherence to the existing enforced local and state groundwater use restrictions. The impermeable barrier portion of the selected alternative includes asphalt paving as the uppermost layer; this asphalt cover serves not only as an armor protection for the impermeable layer but would also provide for surface use of the property by vehicles. Likely future uses of the site for parking of trucks or heavy equipment would not be incompatible with the remedy and is consistent with current adjacent land use and zoning. Additionally, if conducted consistent with the indicated Declarations

of Restriction, construction of commercial buildings would not be prohibited by the selected remedial alternative nor inconsistent with current area land use and zoning.

## VII. Summary of Site Risks

The baseline risk assessment estimates what risk the site poses if no action were taken. It provides the basis for taking action and identifies the contaminants and exposure pathways that need to be addressed by the remedial action. This section of the ROD summarizes the results of the baseline risk assessment for this site.

The reader is referred to the previously presented table Exposure Pathways Quantitatively Assessed in the Baseline Risk Assessment in Section V - Site Characteristic of this ROD and the attached table entitled Concentration Range of Risk Driving Chemicals of Potential Concern. The more significant risk driving carcinogenic chemicals in site soils were found to be chromium (VI), vinyl chloride, a suite of poly-nuclear aromatic hydrocarbons, and cadmium; the non-carcinogenic soil risk was predominantly from 1,1-dichloroethane. Unacceptable risk presented by carcinogenic chemicals in on-site shallow groundwater was presented by vinyl chloride and poly-nuclear aromatic hydrocarbons, with non-carcinogenic risk being presented by manganese, vinyl chloride, and 1,2-dichloroethene. Please see the attached Risk Tables - 1, 2, & 3 detailing the risk driving contribution of all chemicals including the less significant chemicals and each chemicals contribution to the overall site risk.

Risk Characterization Summary: For carcinogens, risks are generally expressed as the incremental probability of an individual's developing cancer over a lifetime as a result of exposure to the carcinogen. Excess lifetime cancer risk is calculated from the following equation:

$$\text{Risk} = \text{CDI} \times \text{SF}$$

where:

risk = a unitless probability (e.g.,  $2 \times 10^{-5}$ ) of an individual's developing cancer

CDI = chronic daily intake averaged over 70 years (mg/kg-day)

SF = slope factor, expressed as (mg/kg-day)<sup>-1</sup>.

These risks are probabilities that usually are expressed in scientific notation (e.g.,  $1 \times 10^{-6}$ ). An excess lifetime cancer risk of  $1 \times 10^{-6}$  indicates that an individual experiencing the reasonable maximum exposure ("RME") estimate has a 1 in 1,000,000 chance of developing cancer as a result of site-related exposure. This is referred to as an "excess lifetime cancer risk" because it would be in addition to the risks of cancer individuals face from other causes such as smoking or exposure to too much sun. The chance of an individual's developing cancer from all other causes has been estimated to be as high as one in three. U.S. EPA's generally acceptable risk range for site-related exposures is  $10^{-4}$  to  $10^{-6}$ .

The potential for noncarcinogenic effects is evaluated by comparing an exposure level over a specified time period (e.g., life-time) with a reference dose ("RfD") derived for a similar exposure period. An RfD represents a level that an individual may be exposed to that is not expected to cause any deleterious effect. The ratio of exposure to toxicity is called a hazard quotient ("HQ"). An HQ of less than 1 indicates that a receptor's dose of a single contaminant is less than the RfD, and that toxic

noncarcinogenic effects from that chemical are unlikely. The Hazard Index ("HI") is generated by adding the HQs for all chemical(s) of concern that affect the same target organ (e.g., liver) or that act through the same mechanism of action within a medium or across all media to which a given individual may reasonably be exposed. An HI of less than 1 indicates that, based on the sum of all HQ's from different contaminants and exposure routes, toxic noncarcinogenic effects from all contaminants are unlikely. An HI greater than 1 indicates that site-related exposures may present a risk to human health.

The HQ is calculated as follows:

$$\text{Non-cancer HQ} = \text{CDI/RfD}$$

where: CDI = Chronic daily intake  
RfD = reference dose.

CDI and RfD are expressed in the same units and represent the same exposure period (i.e., chronic, subchronic, or short-term).

The response action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

## VIII. Remedial Action Objectives

Remedial action objectives provide the foundation upon which remediation alternatives are developed. Remedial action objectives should reflect U.S. EPA's remedy selection expectations, as presented in CERCLA and the National Contingency Plan ("NCP"). CERCLA establishes a preference for remedial actions which permanently and significantly reduce the volume, toxicity or mobility of hazardous substances, pollutants and contaminants. 42U.S.C. §9621(b). Furthermore, CERCLA states that U.S. EPA shall select a remedial action that is protective of human health and the environment, that is cost effective, and that utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. 42 U.S.C. §9621(b). The NCP provides that where practicable, U.S. EPA expects to treat principle threats, employ engineering controls (e.g. containment) for low-level threats or where treatment is impracticable, use institutional controls to supplement engineering controls, consider using innovative technology, and restore usable groundwaters to beneficial uses wherever practicable. The remedial action objectives should reflect the reasonably anticipated or intended future use of the land 40 C.F.R. §300.430(a)(1)(iii). As the existing Declaration of Restriction prohibits residential development of the site, and considering the physical nature and setting of the site, remediation to protect future site workers and trespassers, along with mitigation of groundwater contaminant source material are appropriate. Active restoration of groundwater is not practicable in-light of the ubiquitous nature of groundwater contamination in the region and to maintain consistency with remedial action objectives established for the adjacent SER NPL site.

The following Remedial Action Objectives were established for the IPC site:

- Mitigate the potential risk of exposure to on-site workers and possible trespassers via dermal contact, ingestion or inhalation of hazardous substances from surface soils to protective levels.

- Mitigate the potential for incremental releases of hazardous substances from site soils to area groundwater.
- Restore the aquifer to drinking water standards within a time frame consistent with the regional approach to nearly ubiquitous chlorinated VOC contamination.

The risk identified in the risk assessment relate to three exposure pathways:

- 1) dermal contact with and/or ingestion of contaminants in soil;
- 2) inhalation of contaminants in soil (i.e. dust) and volatilization of contaminants from soil to ambient air followed by inhalation;
- 3) ingestion of contaminants in groundwater or the inhalation of contaminants following volatilization from water during showering or bathing.

Because of the existing state and local prohibitions of groundwater use in the area of the site exposure pathway number 3 need not be addressed by the Remedial Action Objectives. The first Remedial Action Objective addresses exposure pathways number 1 and 2. The second Remedial Action Objective will reduce the dependence on monitored natural attenuation of groundwater and time period for natural attenuation to occur.

## **IX. Description of Alternatives**

The Feasibility Study ("FS") presented three remedial action alternatives for detailed review. In addition the FS evaluated an excavation alternative and found excavation to offer minimal additional risk reduction and technically impracticable. Implementation of the excavation alternative was estimated to require construction and operation of the SVE component of Alternative #3 to reduce VOC emission during excavation activity, placement of sheet piling around the entire 2.8 acre site, removal of an estimated 86,000 yds<sup>3</sup> of predominantly foundry sand fill material, and the replacement of an equivalent quantity of off-site fill material. This alternative would not address similar foundry sand fill material underlying adjacent properties on all sides of the IPC site and would have resulted in a "clean island" concept at the site. The foundry sand contaminants ubiquitous to the area of the site are more appropriately managed with the regional approach taken at the adjacent SER site; the excavation alternative was not carried forward through full detailed review. Active groundwater pump and treat alternatives were rejected early in the FS process based on the SER - ROD and the IPC sites similar characteristics including the hydrogeologic setting, contaminants of concern, groundwater use, and physical limitations. The IPC - FS did not exhaustively evaluate the groundwater pump and treat option but rather relied on site similarity and the detailed analysis made during the SER - RI/FS and ROD. The three remedial action alternatives carried through full evaluation were:

**Alternative #1 - No Action beyond Maintenance of Existing Institutional Controls;**

**Alternative #2 - Institutional Controls, Engineered Barrier, and Monitored Natural Attenuation of Groundwater; and**



**Alternative #3 - Institutional Controls, an Engineered Barrier, Soil Vapor Extraction ("SVE"), and Monitored Natural Attenuation of Groundwater.**

**These three alternatives are further described below:**

**Common Elements:** All three remedial alternatives include the common element of maintaining existing institutional control (deed restriction prohibiting residential development). Additionally Alternatives #2 and #3 include the common elements of further institutional controls including additional property owner implemented deed restrictions to insure protection of construction workers during future on-site excavation by requiring appropriate OSHA training of construction workers, appropriate health & safety plans during construction activities, compliance with ARARs relative to soil management, and further obligating adherence to the existing State of Illinois and City of Rockford groundwater use restrictions, implementation of a Groundwater Management Zone ("GMZ") and monitored natural attenuation of groundwater.

**Alternative #1: No Action** - This is the baseline condition required by the NCP for comparison purposes, and assumes that no remedial measures would be implemented at the site. The existing site security fence and existing deed restriction would remain under this alternative. The deed restriction already in place prohibits residential development of this property.

This alternative relies solely on existing institutional controls to prevent contact with site contaminants. The calculated Reasonable Maximum Exposure ("RME") scenario risks for this alternative are unacceptable due primarily to the presence of metals in soils.

**Alternative #2: Institutional Controls and Engineered Barrier** - This alternative includes an array of institutional controls, the construction of an engineered barrier over the Site, and monitored natural attenuation of groundwater. The institutional controls will include maintenance of the existing site security fence, property owner implementation of deed restrictions, utilization of existing State and City of Rockford groundwater use restrictions, and routine groundwater monitoring by the PRPs. The engineered barrier will consist of an impermeable geosynthetic liner overlain by asphalt pavement. The barrier will be graded to promote drainage. Groundwater contamination beneath the IPC site will be remediated over time through monitored natural attenuation. The ongoing occurrence of natural attenuation is supported by information in the RI - Soil Gas Survey effort which found significant depletion of soil oxygen concentrations in the area of soil and groundwater contamination. The depletion of soil oxygen is a clear indication that aerobic microbial activity is occurring and the RI further indicated that several non-chlorinated organic substrate compounds (e.g. methane) existed in the soil gas fraction. These organic substrates are conducive to aerobic co-metabolism of chlorinated VOCs. The depletion of soil oxygen is, in certain areas of the site, creating an anaerobic environment which is equally conducive to microbial degradation of chlorinated VOCs. While less clearly confirmed by the RI data the likelihood of the on-going occurrence of anaerobic degradation in these areas is supported by the presence of the anaerobic degradation products of chlorinated VOCs in soil gas (e.g. vinyl chloride). Both degradation mechanisms are well recognized for their capacity to provide natural attenuation. While no site specific modeling of natural attenuation was conducted at the IPC site, the site is within the original study area of the SER site where this modeling was conducted. Monitored natural attenuation was the selected groundwater remedy for the SER site and

no specific differences between the ten (10) square mile SER site study area and the included IPC site are apparent from the RI data. The monitoring program will include not only wells in close proximity to the site but will also include monitoring of the two wells (MW-IPC13(S) & MW-IPC12(S)) near the Rock River, and down gradient of the site. Monitoring of MW-IPC13(S) & MW-IPC12(S) is included to insure no adverse release is occurring to that natural resource during the post-closure monitoring period and to verify the monitored natural attenuation remedy is protective of the Rock River.

**Alternative #3: Institutional Controls, Engineered Barrier and SVE** - This alternative will include all of the elements of Alternative #2 (i.e., implementing institutional controls, installing the engineered barrier, and monitored natural attenuation of groundwater), as well as the installation of a SVE system in the general area of the former surface impoundment. The SVE system would be operated to remove volatile organic compounds from the subsurface soil reducing the potential for continued migration of soil contaminants to groundwater. An exacerbating factor exist relative to design and operations of the SVE component of this alternative because of the existence of the Peoples Avenue Landfill site immediately south of the IPC site; this will be discussed further in Section XX following.

## **X. Comparative Analysis of Alternatives**

Nine criteria are used to evaluate the different remediation alternatives individually and against each other in order to select a remedy. The nine evaluation criteria are (1) overall protection of human health and the environment; (2) compliance with ARARs; (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, or volume of contaminants through treatment; (5) short-term effectiveness; (6) implementability; (7) cost; (8) State/support agency acceptance; and (9) community acceptance. 40 C.F.R. §300.430(e)(9)(iii). This section of the Proposed Plan profiles the relative performance of each alternative against the nine criteria, noting how it compares to the other options under consideration. The nine evaluation criteria are discussed below. The "Detailed Analysis of Alternatives" can be found in the FS.

**1. Overall Protection of Human Health and the Environment** determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment. Alternative #1 is not protective of human health, nor does it satisfy the remedial action objectives established for the site. This alternative was therefore not considered further. Alternatives #2 and #3 effectively eliminate the majority of the human health risks posed by the site, and restrict access to the regionally contaminated groundwater during the period of monitored natural attenuation. Therefore, both Alternatives #2 and #3 fully satisfy the remedial action objectives, and are protective of human health and the environment.

**2. Compliance with ARARs** evaluates whether the alternative meets Federal and State environmental statutes, regulations, and other requirements that pertain to the site or whether a waiver is justified. Both Alternatives #2 and #3 are expected to meet State and Federal ARARs. A list of the ARARs identified for the selected remedy can be found in the attached ARAR Tables 1 through 7 and are summarized in Section XIII following.

**3. Long-term Effectiveness and Permanence** considers the ability of an alternative to maintain protection of human health and the environment over time. Alternative #2 does not remove or treat the risks posed by site soils, and does not actively treat contaminated groundwater. However, the principal threats at the Site have already been eliminated as a result of the previous removal activities. The concentrations of VOC contaminants in soils is believed to be sufficiently low so as not to present a continuing source of groundwater contamination, after implementation of Alternative #2, and these soil VOCs will degrade over time as substantiated by soil gas information indicating bio-degradation is occurring and the presence of the break-down products of chlorinated organics.

The concentrations of VOC and SVOC contaminants in groundwater will decline over time through monitored natural attenuation.

Alternative #3 offers the same long-term effectiveness as described for Alternative #2, and offers somewhat enhanced permanence by removing residual VOC contaminants in site soils. However, the metals will remain on-site.

The long-term effectiveness of both Alternatives #2 and #3 can be optimized through effective design and implementation of routine maintenance, and can be verified through the regular site inspections and the CERCLA mandated five year review process. These will ensure that the alternatives will remain effective in the long term.

**4. Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment** evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present. Alternative #2 does not use treatment technologies to reduce the toxicity or volume of the residual contaminants in site soils, but does allow naturally occurring biological processes to continue the degradation of VOCs. Alternative #3 uses SVE treatment technologies to remove VOC contaminants in site soils. Off-site treatment and/or destruction have already been used to mitigate the principle threats posed by wastes formerly present on the site. With both Alternatives #2 and #3, contaminated groundwater would not be treated. However, the concentrations of VOC and SVOC contaminants in groundwater would decline over time through monitored natural attenuation. Both Alternatives #2 and #3 reduce the mobility of site contaminants to groundwater by preventing infiltration of rain water and snow melt water through site soils.

**5. Short-term Effectiveness** considers the length of time needed to implement an alternative and the risk the alternative poses to workers, residents, and the environment during implementation. Construction of Alternative #2 would take approximately one to three months, and could be completed within one construction season. During this period, construction workers and the community could potentially be exposed to site contaminants. However, the construction workers will be working under a site-specific health and safety plan which will specify appropriate dermal and inhalation protection; exposure to the community will be short-term and will be addressed through the exercise of appropriate safety precautions and construction controls.

Construction of Alternative #3 is expected to take two to four months, and could be completed in one construction season. During the construction period, construction workers and the community could potentially be exposed to site contaminants as discussed in Construction of Alternative #2. During operation of the SVE system, vapors may be released to the atmosphere, and spent carbon and condensate may require handling as either solid or hazardous wastes. These risks will be minimized through site-specific health and safety plans, the exercise of appropriate safety precautions, and compliance with approved material handling plans.

A summary of the length of time needed to implement each alternative is presented in the table - **Summary Table of Alternative Cost and Time to Complete** presented at the end of this section of the ROD.

6. **Implementability** considers the technical and administrative feasibility of implementing the alternative such as relative availability of goods and services. Both Alternatives #2 & #3 are readily implementable, and can be constructed using standard construction techniques and materials. However, construction of both are weather dependent and must be undertaken during the summer construction season. After construction the SVE system can be operated year round.

The implementability of the SVE component of Alternative #3 is to some extent in question because of the exacerbating presence of the adjacent Peoples Avenue Landfill and evidence that methane migration from that source is already occurring toward the IPC site; a final decision on the implementability of Alternative #3 can not be made until such time as a design study, including a pilot test of SVE technology has been conducted.

7. **Cost** includes estimated capital and operation and maintenance cost as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.

The Net Present Worth of the three evaluated alternatives is as follows:

Alternative #1	not applicable
Alternative #2	\$2,328,000
Alternative #3	\$4,661,000

A summary of capital and operation and maintenance cost for each alternative is presented in the table - **Summary Table of Alternative Cost and Time to Complete** presented at the end of this section of the ROD and the **Cost Tables 1 through 3** attached.

8. **State/Support Agency Acceptance** considers whether the U.S. EPA agrees with the State analyses and recommendations of the RI/FS and the proposed plan. U.S. EPA has reviewed this Record of Decision and supports the Preferred Remedial Alternative.

9. **Community Acceptance** considers whether the local community agrees with the State's analyses and preferred alternative. Comments received on the proposed plan are an important indicator of

community acceptance. The proposed plan, presented in a formal public hearing, indicated that Alternative #3 was the option preferred by the Illinois EPA and U.S. EPA with Alternative #2 as a contingent remedy if the SVE component of Alternative #3 was found to be technically impracticable. Comments received from the PRPs (during the public comment period) evaluated, among other factors of the preferred option, the potential for migration of VOCs to groundwater. These comments present a persuasive argument that after implementation of Alternative #2 (the impermeable barrier alternative) the potential for continued migration of VOCs to groundwater will be sufficiently reduced so as not to require the SVE component of Alternative #3. Additionally the comments received present a substantial case that, following construction of the impermeable barrier, VOCs in site soil will not constitute an inhalation hazard via their volatilization to ambient air.

<b>Summary Table of Alternative Cost and Time to Complete</b>			
<b>Alternative #</b>	<b>Alternative #1</b>	<b>Alternative #2</b>	<b>Alternative #3</b>
<b>Estimated Capitol Cost:</b>	<b>\$0</b>	<b>\$985,000</b>	<b>\$1,634,000</b>
<b>Estimated Annual O&amp;M Cost:</b>	<b>\$0</b>	<b>\$1,343,000</b>	<b>\$3,027,000</b>
<b>Estimated Present Net Worth:</b>	<b>\$0</b>	<b>\$2,328,000</b>	<b>\$4,661,000</b>
<b>Estimated Time to Construct:</b>	<b>0</b>	<b>1- 3 Months</b>	<b>2 - 4 Months</b>
<b>Estimated Cleanup Time for Soils:</b>	<b>Not Applicable</b>	<b>Not Applicable</b>	<b>5 Years</b>
<b>Estimated Cleanup Time for Groundwater:</b>	<b>&gt;200 Years</b>	<b>&gt;200 Years</b>	<b>&gt;200 Years</b>

## **XI. Principle Threat Waste**

All materials that met the definition of principle threat waste were removed from the site during the various removal actions discussed in Section II above.

## **XII. Selected Remedy**

### **Summary of the Rational for the Selected Remedy:**

The selected remedy for the IPC site is **Alternative #2: Institutional Controls and Engineered Barrier, and Monitored Natural Attenuation of Groundwater** as discussed generally above in Section IX with the **SVE component of Alternative #3** maintained as a contingent remedial option. The decision to implement the SVE component will be made following implementation of **Alternative #2** and a demonstration period ( at the Five Year Review) and will be based on statistical analysis of site groundwater contamination trends. The PRPs will provide to the Illinois EPA a summary report of groundwater monitoring data containing a statistical analysis of this data 90 days prior to each Five Year Review. If during each Five Year Review cycle spastically significant decreases in on-site and down gradient concentrations of trichloroethene and 1,1,1-trichloroethane in shallow groundwater are not verified (which cannot be attributed to upgradient sources), the SVE

design pilot test will be implemented. The final decision to implement the SVE remedy component will be made by the Illinois EPA based on performance of the SVE design pilot test indicating that the SVE remedy can be safely implemented considering the landfill gas concerns relative to the adjacent Peoples Avenue Landfill. This is a change from the Preferred Alternative presented in the proposed plan; In the Site Alternative #3 was the preferred alternative. This change in preferred alternative is based on full consideration of public comment received on the proposed plan. This change could have been reasonably anticipated from the analysis of alternatives presented in the proposed plan and specifically the discussion relating to the risk associated with operation of the SVE component.

The selected alternative, with the contingent implementation of the SVE component provides the best balance of trade-offs with respect to the balancing and modifying criteria in that:

- Long Term Effectiveness is plausible in that the principle threat has been removed from the site and following consideration of a supplemental evaluation of the site contaminants likelihood of migration to groundwater. This supplemental evaluation is contained in PRP comments received during the public comment period and is included in the Administrative Record. Verification of Long Term Effectiveness of the selected alternative will be a primary subject of the Five Year Review;
- Reduction of Toxicity, Mobility, or Volume Through Treatment may not be required (base on public comment received during the comment period) to achieve the Remedial Action Objectives. The need for additional reduction in toxicity, mobility, or volume of site contaminants through treatment will be evaluated during the Five Year Review;
- Short Term Effectiveness is provided by the impermeable barrier component and the implementation of the Institutional Controls components of the alternative and need not be delayed to determine the implementability of the SVE component;
- Implementability of the Selected Alternative can be achieved. The implementability of the SVE component is the subject of significant question as discussed above and in the proposed plan. If the long term effectiveness of Alternative #2 is found lacking, at any Five Year Review, the implementability of the SVE component will be further evaluated with-out delaying construction of the readily implementable barrier and institutional control components of the remedy;
- Cost of the selected alternative is reasonable considering the substantial risk reduction that will be achieved;
- U.S. EPA acceptance of the selected alternative has been acquired; and
- Community acceptance of Alternative #3 was the subject of significant and persuasive comment. Alternative #2 was accepted by the public based on the comment received by Illinois EPA.

**Description of the Selected Remedy:**

Based on the rational presented above Alternative #2 with contingent addition of the SVE component of Alternative #3 following any five year review is the selected remedy for the IPC site. Alternative #2 consist of the following major remedy components:

- **Institutional Controls**

- Maintain the existing Declaration of Restriction already filed with the Winnebago County Recorder which contains the following pertinent language "The following restrictions are hereby placed upon the use of the aforesaid real property (also described herein as "the site") and shall run with the land, so as to prohibit to-wit: a) all residential development of the site; b) all public access to the site except for general industrial use; c) all unpermitted treatment, storage or disposal of waste on the site; and d) all uses of groundwater at the site; all of the above except as required by the Illinois Environmental Protection Agency or the United States Environmental Protection Agency." This Declaration of Restriction was filed March 10, 1995.

- Attach additional Declaration(s) of Restriction to the property including: noting the presence of hazardous substances on the site and the requirement that no excavations or other penetrations of the impermeable barrier be allowed unless the construction workers are trained consistent with 29 CFR 1910.120 ("OSHA") and work under an adequate health and safety plan; that all soil spoil material be managed consistent with a soil management plan consistent with all applicable state and federal laws applicable at the time and that this soil management plan be specific to any planned on-site construction activity, and furthermore that each specific soil management plan be endorsed by a person qualified to write such plans and that each specific soil management plan be provided to the Illinois EPA 30 days prior to initiation of construction activity; that the engineered barrier be maintained consistent with an inspection, maintenance, and corrective action plan to be developed as part to the remedial design and approved by the Illinois EPA.

- Implement a Groundwater Management Zone for the area of site impacted groundwater.

- Maintain the existing site security fence to enforce item b of the above Declaration of Restriction.

- Supplement existing warning signs around the site perimeter discouraging trespassers and noticing a prohibition of unauthorized excavation.

- Employing existing City of Rockford ordinances and State requirements that restrict the installation of potable groundwater wells within contaminated groundwater, and within minimum setback zones from primary sources. Compliance with these ordinances and State requirements will be reviewed as part of U.S. EPA's mandatory five-year review of CERCLA sites.

- Support Illinois EPA's public education efforts in the SER Area. The ROD for the SER site indicates that the Illinois EPA will rigorously educate the public about the potential risks associated with using contaminated groundwater in southeast Rockford, and will discourage the use of groundwater for drinking and bathing.

- **Engineered Barrier Over The Entire Site**

- The engineered barrier will be installed to:

Prevent direct contact with site contaminants, serve as an impermeable barrier to limit exposure to soil vapors, prevent fugitive dust emissions, and reduce storm-water infiltration through site fill, thereby reducing potential releases to groundwater.

The engineered barrier would be installed in addition to the cap which had been constructed over the former surface impoundment. This existing cap was installed in 1992 as part of a removal action, and consists of six inches of compacted clay.

The engineered barrier will be comprised of a flexible membrane liner, with an overlying asphalt surface. From top to bottom, it will generally consist of an 8-inch thick asphalt pavement, underlain by 12 inches of granular base course, a 40 mil flexible membrane liner ("FML"), and a variable thickness grading layer. Geotextile fabric is included in the cost estimate for the engineered barrier as an option to be placed above the FML as further protection dependent upon the aggregate size reasonably available for the granular base course. The barrier will have a center crown, and will be sloped at a 1 to 1.5 percent grade to promote sheet runoff from the asphalt surface. The underlying FML will also be sloped at a 1 to 1.5 percent grade to promote drainage of any water that passes through the asphalt surface. Drainage holes will be provided between the asphalt surface and FML along the site perimeter to minimize the accumulation of moisture between the two barriers. Clean runoff will flow to the railroad right-of-way immediately south of the site. A swale will be formed in the asphalt pavement along the north edge of the site to direct surface water runoff towards Seminary Street. The asphalt pavement and granular base course will support heavy commercial truck traffic, thereby facilitating use of the IPC site for limited commercial purposes.

The FML will serve as the primary impermeable barrier, reducing the infiltration through the site surface. The U.S. EPA Hydrologic Evaluation of Landfill Performance ("HELP") model, versions 3.01 and 3.07, were used to model the infiltration through the site surface under existing conditions and under the new impermeable barrier scenario. The HELP model (Appendix D) indicates that, under current conditions, 6.2 inches of precipitation (472,000 gallons) infiltrates annually through the ground surface at the site. The HELP model predicts that installation of the engineered barrier would reduce infiltration to 0.00014 inches annually (11 gallons). Thus, the engineered barrier reduces infiltration by approximately 99.998 percent. The reduction in infiltration is achieved primarily via the FML in conjunction with regrading of the site to promote efficient drainage, and installation of the relatively impermeable asphalt surface, which further sheds surface water. The clean runoff from the



impermeable barrier will be routed to the City of Rockford storm sewer system catch basin located on Seminary Road, and to the railroad right-of-way located immediately to the south of the site.

The site will be cleared prior to installing the engineered barrier. The six on-site groundwater monitoring wells will be abandoned in accordance with the Illinois Water Well Construction Code. Trees and brush will be cleared, chipped and evenly spread over the site. The disconnected overhead electrical lines, poles and transformers on the north side of the site will be removed and disposed of properly. The personal protective equipment ("PPE"), generated during the 1994 remedial investigation and currently stored on-site in drums, will be removed from the drums and disposed of off-site as solid waste. Investigation-derived waste ("IDW"), also generated during the 1994 remedial investigation and currently stored on-site in drums, will be removed from the drums and buried below the grading layer in the former underground storage tank ("UST") excavation. The USTs were removed in 1991 as part of a removal action, and the excavation was lined with geotextile and backfilled with clean granular material from an off-site source. Existing debris, consisting of piles of concrete, miscellaneous construction debris, and other solid material that is currently on the ground surface and that may interfere with subsequent grading or cover placement, will also be buried in the former UST excavation. Excess granular material will be reused as the grading layer for the new impermeable barrier. The emptied drums will be rinsed and recycled off-site as scrap steel.

During site grading, the surface of the fill will be compacted to provide an adequate surface for the FML. This compaction will also minimize potential settlement from later construction activities and future site operations. The surface for the FML will be cleared of rock, sticks, or debris that could damage the FML. Wood chips from shredded trees and bushes will be covered with a thin layer of fill so that the liner would not be punctured.

- **Monitored Natural Attenuation of site contaminants**

Groundwater contamination beneath the IPC site will be remediated through monitored natural attenuation. The Illinois EPA and U.S. EPA adopted this approach for the SER site, noting that the aquifer will not be actively restored to drinking water quality. Illinois EPA and U.S. EPA noted that passive restoration will occur over an extended period of time, with only a small incremental reduction of groundwater contaminants expected on an annual basis.

- **Groundwater monitoring**

At a minimum quarterly groundwater monitoring will be conducted. The monitoring data will provide an indication of the effectiveness of the engineered barrier in preventing surface water infiltration and provide data to assess the rate of monitored natural attenuation of contaminants in groundwater. However, it is important to note that groundwater quality upgradient of the site is highly variable. Several distinct plumes have been identified that will migrate through the area over an extended period of time. The source, or sources, of these plumes have not been identified. Groundwater monitoring will be a key component in

determining the effectiveness of the impermeable barrier, discussed above, and the decision at each five year review as to the need to implement the contingent option of SVE in addition to the remedy. In order to insure that monitored natural attenuation of groundwater continues to be protective of the Rock River, the two shallow monitoring wells (MW-IPC-12(S) & MW-IPC-13(S)) will remain as part of the post-closure groundwater monitoring program.

For cost estimating purposes, the feasibility study assumed that six existing monitoring wells, located upgradient and down gradient of the site, will be sampled annually for the 30 year post-closure period, and that groundwater samples will be analyzed for inorganics on the Target Analyte List ("TAL"), and VOCs and SVOCs on the Target Compound List ("TCL"). This ROD requires that a minimum of eight monitoring wells be included in the post-closure monitoring program and that these wells will be sampled at a minimum quarterly. This change is not inconsistent with the -30/+50% accuracy cost estimate indicated by FS guidance.

#### **- Quarterly & Annual Inspection**

Following completion of construction activities, site inspections will be performed on a quarterly basis to document the integrity of the existing site security fence and engineered barrier, the effectiveness of the institutional controls, and the condition of the monitoring well system. On a yearly basis and consistent with the inspection, maintenance and corrective action plan to be developed as part to the remedial design and approved by the Illinois EPA the pavement will be inspected and damaged areas will be repaired. Cracks in the pavement will be filled and the entire surface will be sealed. Results of the inspections will be documented in inspection reports submitted to the Illinois EPA.

#### **- Contingent SVE enhancement**

If, at each five year review cycle, incremental decrease of TCE and 1,1,1-TCA concentrations are not discernable in groundwater, and this lack of incremental decrease cannot be attributed to up-gradient sources, the implementation of the SVE pilot test will be performed. This SVE pilot test will be conducted to acquire not only the standard SVE design parameters of blower size, vacuum well spacing, projected emission rates, etc, but also to determine the overall viability of the SVE component considering the evidence of landfill gas migration contained in the RI. Further discussion as to the implementability of the SVE contingent remedy can be found above in Section X.6 Implementability. Key to determining the viability of the SVE component will be assessing the viability of passive air wells between the IPC site and Peoples Avenue Landfill to break the SVE vacuum there by precluding or reducing landfill gas encroachment toward or onto the IPC site (note that technologies other than passive air wells may be available or developed prior to the five year review and should also be considered during the SVE pilot test).

If implemented, the SVE component of the remedy would consist of a series of gas extraction wells under vacuum created by one or more blowers. The exact number and location of

vacuum wells required to implement an effective program can only be determined following assessment of the pilot test results; however the FS projected a series of 32 wells connected to one blower house. The blower house would contain not only the SVE blower but also a moisture knock-out tank to remove entrained soil moisture and two in-line vapor phase granular activated carbon units to reduce air emission of VOCs to acceptable limits. While not specifically discussed in the FS an additional standard component of SVE blower systems is a muffler system to reduce noise emission, this component must be considered during design of the system and installed if appropriate. If implemented the SVE component would have a projected operational period of five (5) years.

#### **Summary of the Estimated Remedy Cost:**

Capitol cost for the selected remedy is estimated to be \$985,000; Year 1 Operation & Maintenance Cost are estimated to be \$87,155; Total Present Worth Cost are estimated to be \$2,328,000. Detailed cost information on all of the above remedy components can be found in the attached Capitol Cost, Year 1 Operation & Maintenance Cost, and Summary and Total Present Worth Cost tables which are attached.

#### **Expected Outcomes of the Selected Remedy:**

**Availability of Site for Productive Reuse:** The land currently occupied by the IPC site would be available for development, consistent with the institutional controls component of the remedy, immediately following completion of the impermeable barrier. Completion of the impermeable barrier, dependent upon construction constraints, could reasonably be expected to be completed within 3 months of remedial construction start. Groundwater use, because of existing local ordinances and state set-back requirements is not anticipated; the remediation of groundwater impacted by releases from the IPC site, by monitored natural attenuation, is expected to require in excess of 200 years. This period will likely be extended for groundwater in the area of the site because of the plume of contaminants migrating toward the site from up-gradient sources as identified in the RI and as discussed previously in Section VI above.

**Cleanup Levels:** Because the selected remedy is a containment remedy with monitored natural attenuation no specific cleanup levels for groundwater are specified in this ROD. If the contingent remedy SVE component of the selected remedy is implemented specific cleanup levels may be specified at that time. However, since the singular intended purpose of the SVE component is to reduce the soil VOC sources of groundwater contamination, operation of the SVE system to sustained asymptotic removal rates is the expectation of this Record of Decision.

It should be noted that the selected remedy may change somewhat as a result of the remedial design and construction processes. Changes to the selected remedy described in the ROD will be

documented using a technical memorandum in the Administrative Record, and an Explanation of Significant Difference ("ESD"), or a ROD amendment.

### **XIII. Statutory Determinations**

Under CERCLA §121 and the NCP, the lead agency must select remedies that are protective of human health and the environment, comply with ARARs (unless a statutory waiver is justified), are cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous wastes as a principal element and a bias against off-site disposal of untreated wastes. The following sections discuss how the selected remedy meets these statutory requirements.

#### **Protection of Human Health and the Environment:**

As a result of the various removal actions discussed in Section II above, construction of the impermeable barrier, maintenance of existing and placement of additional institutional controls on the site, and monitored natural attenuation of groundwater the selected remedy will adequately protect human health and the environment. Exposure levels will be reduced to U. S. EPA's generally acceptable risk range of  $10^{-4}$  to  $10^{-6}$  for carcinogenic risk and below the HI of 1 for non-carcinogens. The implementation of the selected remedy will not pose unacceptable short-term risk or cross-media impacts and there is no evidence to indicate that ecological risks currently exist at the site or will be created by the selected remedy.

The various removal actions taken at the site have effectively removed all principle threats from waste at the site. The impermeable barrier will serve to protect site workers from dermal contact with contaminated soils, effectively eliminate volatilization of contaminants to the breathing zone, and significantly reduce infiltration of precipitation and snow melt through the contaminated soils. To insure that protection is maintained by the impermeable barrier this unit is armored with asphalt paving and the institutional controls portion of the selected remedy contains adequate provisions for maintenance of this armor layer; requires that any future excavation through the impermeable layer be performed by construction workers properly trained to work with contaminated soils and in environments potentially containing VOCs by requiring that such work be performed by workers trained consistent with 29 CFR 1910.120; and requires that any excavation of soil is managed in compliance with all applicable state and federal laws. An existing Declaration of Restriction attached to the deed of the property prohibits residential development of the site in the future.

#### **Compliance with Applicable or Relevant and Appropriate Requirements:**

The selected remedy consisting of an impermeable barrier, institutional controls, monitored natural attenuation of groundwater, and the contingent SVE component are expected to comply with all ARARs identified for the alternative. No waiver of ARARs is required for the selected alternative. The ARARs are presented below and in more detail in the ARAR Tables 1 through 7 attached.

Chemical, Location, and Action-Specific ARARs include the following:

- Safe Drinking Water Act MCL (40 CFR Part 141), which specify acceptable concentration levels in groundwater that serves as a potential drinking water aquifer
- Clean Water Act FWQC (40 CFR Part 403).
- Clean Water Act National Pollution Discharge Elimination System ("NPDES") Permit Program (40 CFR 122)
- RCRA Subtitle D requirements for lagoon closure (40 CFR 264.), which specify a cap with a permeability less than or equal to the permeability of any bottom liner or natural subsoils present at the site.
- Post-Closure and Monitoring requirements for 30 years (40 CFR 264).
- RCRA requirements for waste management (40 CFR 264, 268, 270).
- Clean Air Act National Emission Standards (40 CFR 61, 63)
- Clean Air Act Implementation of State Plans (40 CFR 52)
- Federal Water Pollution Control Act Discharge to POTW requirements (40 CFR 403)
- Illinois Groundwater Quality Standards (35IAC 620)
- Illinois Ambient Air Quality Standards (35 212 & 215)
- Illinois Organic Material Emission Standards and Limitations (35IAC 215)
- Illinois Standards for New Solid Waste Landfills (35IAC 811)
- Illinois Air Pollution Permits & General Standards (35IAC 201)
- Illinois Air Pollution Alternative Control Strategies (35IAC 202)
- Illinois Water Pollution Introduction & Pretreatment Programs (35IAC 301, 310)
- Illinois Water Pollution Sewer Discharge Criteria (35IAC 307)
- Illinois Sound Emission Standards and Limitations (35IAC 900 & 901)
- Illinois Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities (35IAC 724, 725)

·Illinois Dept. Of Public Health, Illinois Water Well Construction Code (Section 920)

·Illinois Environmental Protection Act Title IV, Section 14.1

·Illinois Public Water Supply regulations (35IAC 653)

Other Criteria, Advisories, or Guidance To Be Considered ("TBCs") for This Remedial Action:

·Illinois Tiered Approach to Clean-up Objectives (35IAC 742)

·City of Rockford, Water Division Ordinance, Section #31-10

In implementing the selected remedy, the Illinois EPA, and U.S. EPA have agreed to consider a number of non-binding criteria that are To Be Considered ("TBC"). These include the guidance on designing RCRA caps, Draft RCRA Guidance Document, Landfill Design, Liner Systems and Final Cover, issued June 1982. The guidance on designing RCRA caps includes specifications to be followed in constructing and maintaining a RCRA cap.

#### **Cost-Effectiveness:**

In the Illinois EPA's judgment the Selected Remedy is cost-effective and represents a reasonable value for the money to be spent. In making this determination, the following definition was used: "A remedy shall be cost-effective if its costs are proportional to its overall effectiveness." (NCP §300.430(f)(1)(ii)(D)). This was accomplished by evaluating the "overall effectiveness" of those alternatives that satisfied the threshold criteria (i.e., were both protective of human health and the environment and ARAR-compliant). Overall effectiveness was evaluated by assessing three of the five balancing criteria in combination (long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; and short-term effectiveness). Overall effectiveness was then compared to costs to determine cost-effectiveness. The relationship of the overall effectiveness of this remedial alternative was determined to be proportional to its costs and hence this alternative represents a reasonable value for the money to be spent.

The estimated total present worth cost of the selected remedy is \$2,328,000. Alternative #3 is \$2,333,000 more expensive, achieves minimal additional short-term risk reduction, and may not be implementable, therefore the selected remedy is cost-effective. If at the five year review it is determined that the selected remedy is not effective in prohibiting further migration of VOCs from site soil to groundwater this ROD provides for the implementation of the SVE component of Alternative #3. As part of that five year review, cost effectiveness of the SVE component, along with implementability will be revisited if implementation is anticipated.

#### **Utilization of Permanent Solutions and Alternative Treatment (or Resource Recovery) Technologies to the Maximum Extent Practicable ("MEP"):**

While the selected remedy does not adhere with the preference for treatment as a principle element of the remedy, contingent provision is contained in the selected remedy to implement a

treatment alternative (e.g. SVE) if the impermeable barrier is found to not provide adequate protection of groundwater at the time of the five year review. Information presented during the public comment period pleads a persuasive case that active remediation of soil VOCs is likely not required to effectively eliminate site soils from further contribution to groundwater contamination and may not meet the cost-effectiveness requirement of remedy selection. Excavation and on-site treatment of site soils was evaluated and found to be impracticable.

#### **Utilization of Permanent Solutions and Alternative Treatment Technologies (or Resource Recovery Technologies) to the Maximum Extent Practicable**

The Illinois EPA has determined that the selected remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner at the site. Of those alternatives that are protective of human health and the environment and comply with ARARs, the Illinois EPA has determined that the selected remedy provides the best balance of trade-offs in terms of the five balancing criteria, while also considering the statutory preference for treatment as a principal element and bias against off-site treatment and disposal and considering U.S. EPA and community acceptance.

Previous removal actions at the site remediated source materials constituting principal threats at the site. The selected remedy satisfies the criteria for long-term effectiveness by placing an impermeable barrier over residual soil contamination; implementing institutional controls to prohibit residential development, restrict contact with site soils, and preclude use of on-site groundwater (use of off-site contaminated groundwater is prohibited by existing state law & local ordinances); and monitored natural attenuation of groundwater consistent with the regional approach taken at the SER site. If the impermeable barrier and monitored natural attenuation approach to reducing or precluding continued site contributions to groundwater contamination are found inadequate at the five year review this ROD provides for implementation of the SVE component remedy to actively treat residual VOC contamination in site soils.

#### **Preference for Treatment as a Principal Element**

This ROD provides for implementation of the SVE component if the impermeable barrier is found insufficient. The selected remedy in this ROD does not contain an active current treatment component. The statutory preference for remedies that employ treatment as a principal element is not satisfied, however, based on the technical impracticability of excavation for treatment and the high probability of success for containment and natural attenuation of the remaining lower level threats at this site, active treatment is not currently warranted; if the impermeable barrier is found insufficient in protecting groundwater the selected remedy allows implementation of the SVE component and at that time the statutory preference for remedies that employ treatment as a principal element would be satisfied.

#### **Five-Year Review Requirements**

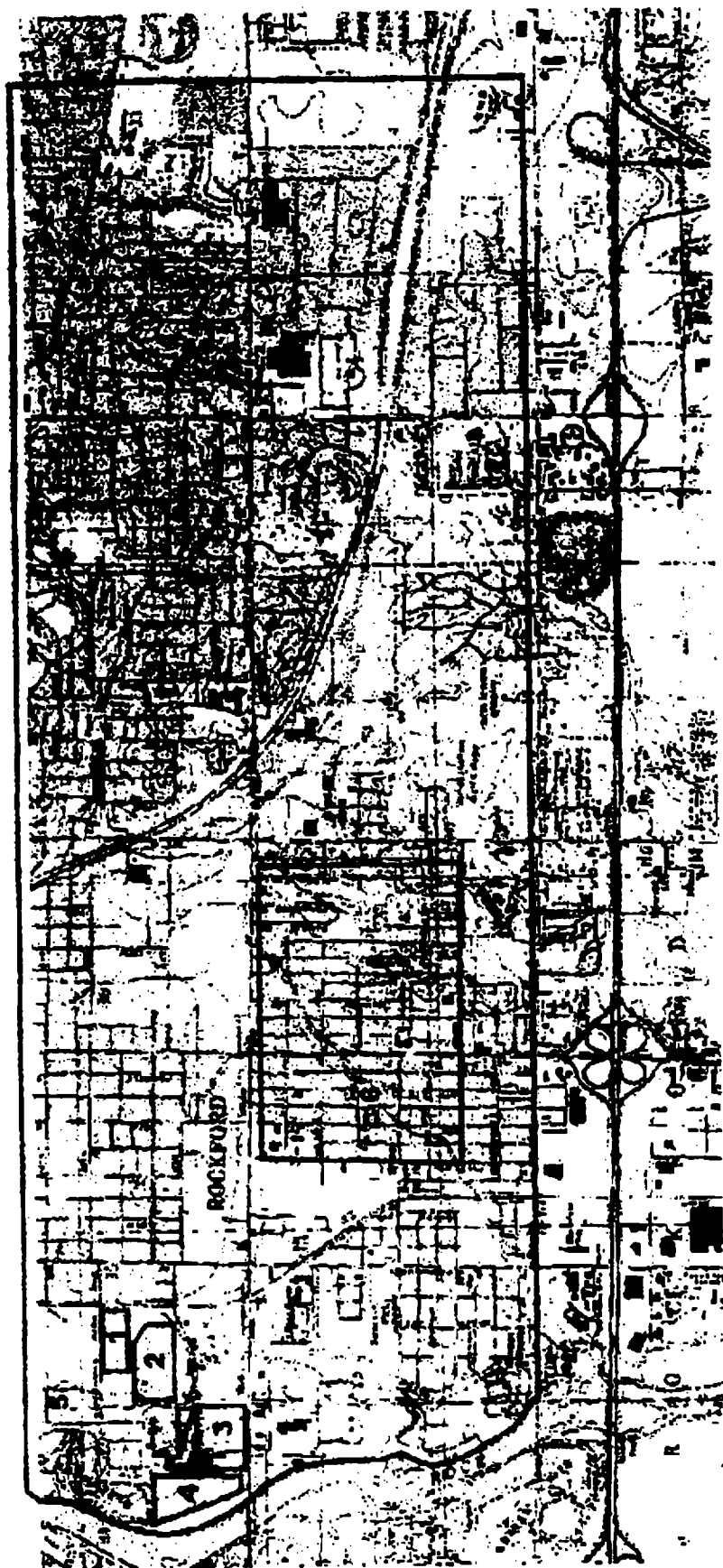
Because this remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a statutory review will

be conducted within five years after initiation of remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

#### **XIV. Documentation of Significant Changes**

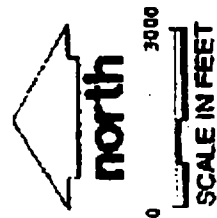
The proposed plan was released for public comment in July of 1999. The plan identified Alternative # 3, impermeable barrier, institutional controls, soil vapor extraction ("SVE"), and monitored natural attenuation of groundwater as the preferred alternative for remediation. Alternative #2, impermeable barrier, institutional controls, and monitored natural attenuation of groundwater was also considered and was presented to the public as a contingent remedy if SVE proved to be not implementable due to adverse impacts by landfill gas encroachment toward the site from the near-by Peoples Avenue Landfill. During the public comment period, new assessment of soil data from the RI was presented which indicates that the SVE component of Alternative #3 may not be necessary to achieve the remedial objectives for the site. Based on this new information, summarized in the responsiveness summary and available in the administrative record file for the site, the Illinois EPA and U.S. EPA decided to select Alternative #2, impermeable barrier, institutional controls, and monitored natural attenuation of groundwater, with SVE component of Alternative #3 as a contingent component as the selected remedy for the IPC site; a final decision on implementation of the SVE is deferred to the five year review. The Illinois EPA and U.S. EPA believe that this change in the selected remedy, from that proposed could have been reasonably anticipated based on information presented in the proposed plan and contained in the administrative record file for the site. During the five year review the quarterly groundwater monitoring data will be evaluated statistically to determine if Alternative #2 is adequately mitigating the site's contribution to groundwater contamination. If the groundwater monitoring data fails to show mitigation of the site's contribution, implementation of the SVE pilot test will be implemented. If a decision to implement the SVE component is made by Illinois EPA and U.S. EPA this decision will be documented in a ESD prior to implementation and this ESD and information supporting the decision will be incorporated into the administrative record file for the site.



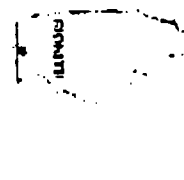


# **LEGEND**

- 1 MATISOM MACHINE WORKS
- 2 GRITTE FOUNDRY
- 3 PEOPLES AVENUE LANDFILL
- 4 FORMER PET FOOD PLANT
- 5 SOUTHEAST ROCKFORD GROUNDWATER CONTAMINATION STUDY AREA
- 6 ORIGINAL SOUTHEAST ROCKFORD GROUNDWATER CONTAMINATION SITE
- 7 IPC SITE



Base map developed from the  
Rockford South, Illinois 7.5 Minute  
U.S.G.S. Topographic Quadrangle Map  
Dated 1976  
Adapted from Goldner Associates-1997



QUADRANGLE LOCATION

## **IPC SITE AREA**

# Concentration Range of Risk Driving Chemicals of Potential Concern

Concentration Range of Risk Driving Chemicals of Potential Concern									
	Surface Soil			Deep Soil On-Site	Fill		Ground-Water (ug/l)		
	On-Site	Background	On-Site		Off-Site	On-Site & Downgradient	Upgradient		
Metals	2.9J - 13.1J	3.6J - 3.8J	8858 - 2.55J	7.7 - 29.95J	2.1 - 4.75	2.9 - 14.7	2.1		
	1.8	ND							
	2.4 - 355	2.8 - 3.3	ND	20.8J - 271	4.9 - 6.95				
	11.6 - 590	12.7 - 16.8	4.2 - 11.75	70.9 - 605	37.3 - 58.3J				
	9.9 - 3970	8.5 - 11.8	7.8 - 58.25	845J - 2180	34.2 - 99.95				
Volatiles	8438 - 76100J	1780 - 3650	78.1 - 126.5	361J - 1550	1163.6 - 1620	21 - 3240	ND		
				**see below		28000 - 180000	ND		
	2.5J - 460J	ND	3J	2J - 7300	ND				
						2J - 28	2J - 34		
			2J	2J - 1300J	ND	2J - 17	2J - 100		
PCBs/Pesticides	2J - 18500J	ND	6J	1100J - 1700J	ND	2J - 100	ND		
	521JP - 1121JP	ND		**see below					
	53JP - 19JP	39JP - 63JP							
	106 - 38100	ND - 1078	ND - 987	1870 - 7300	4120 - 16840				
	171 - 53149	80 - 1043	ND - 1222	9440 - 129000	4328 - 8211				
SemiVolatiles	51J - 9500J	39J - 46J							

D - Compound detected in secondary dilution factor

J - Indicates an estimated concentration

ND - Not Detected

P - Indicates value > 25% of difference between two GC columns, Lower value reported

S - The reported value was determined by the Method of Standard Additions

Chloroform 16000 ppbv

Vinyl Chloride 190000E - 390000E ppbv

E - Indicates an estimated concentration

## Risk Table - 1

### Chemical Risk Drivers for the Soil Pathways

Current On-site Worker		Future Resident	
Cancer Risk <sup>a</sup> = $5 \times 10^{-6}$ to $5 \times 10^{-4}$		Adult Cancer Risk <sup>a</sup> = $4 \times 10^{-4}$ to $1 \times 10^{-3}$	
RME Risk Drivers		RME Risk Drivers	
Chemical <sup>b</sup>	Risk	Chemical <sup>b</sup>	Risk
Chromium (VI)	$3 \times 10^{-4}$ (59%)	Chromium (VI)	$5 \times 10^{-4}$ (51%)
Vinyl chloride	$2 \times 10^{-4}$ (32%)	Vinyl chloride	$3 \times 10^{-4}$ (28%)
PNAs	$2 \times 10^{-5}$ (3%)	PNAs	$1 \times 10^{-4}$ (13%)
Cadmium	$1 \times 10^{-5}$ (3%)	Arsenic	$3 \times 10^{-5}$ (3%)
Arsenic	$9 \times 10^{-6}$ (2%)	Cadmium	$2 \times 10^{-5}$ (2%)
Chloroform	$4 \times 10^{-6}$ (1%)	PCBs	$9 \times 10^{-6}$ (2%)
PCBs	$2 \times 10^{-6}$ (<1%)	Chloroform	$6 \times 10^{-6}$ (1%)
		Beryllium	$5 \times 10^{-6}$ (1%)
		Bis(2-ethylhexyl)phthalate	$3 \times 10^{-6}$ (<1%)
		Heptachlor epoxide	$2 \times 10^{-6}$ (<1%)
		Methylene chloride	$1 \times 10^{-6}$ (<1%)
Noncancer HI <sup>a</sup> = 11 to 20		Child Noncancer HI <sup>a</sup> = 72 to 126	
RME HI Drivers		RME HI Drivers	
Chemical <sup>b</sup>	HI	Chemical <sup>b</sup>	HI
1,1-Dichloroethane	18 (90%)	1,1-Dichloroethane	107 (85%)
		Trichloroethene	4 (3%)
		Cadmium	4 (3%)
		Manganese	3 (2%)
		Chromium (VI)	1 (1%)
		Copper	1 (1%)
<sup>a</sup> The range given is for the MLE and RME scenarios, respectively. <sup>b</sup> Exposure to VOCs such as vinyl chloride and 1,1-dichloroethane is via the inhalation pathway. Exposure to the other chemicals is via ingestion and dermal absorption of soil and inhalation of dust particles.			

## Risk Table - 2

### Chemical Risk Drivers for the Shallow Groundwater Pathways (Future Resident Population)

Shallow Upgradient Groundwater		Shallow Site Groundwater	
Adult Cancer Risk <sup>a</sup> = $3 \times 10^{-5}$ to $4 \times 10^{-4}$		Adult Cancer Risk <sup>a</sup> = $3 \times 10^{-4}$ to $3 \times 10^{-3}$	
RME Risk Drivers		RME Risk Drivers	
Chemical <sup>b</sup>	Risk	Chemical <sup>b</sup>	Risk
1,1-Dichloroethene	$2 \times 10^{-4}$ (60%)	Vinyl chloride	$2 \times 10^{-3}$ (86%)
Tetrachloroethene	$6 \times 10^{-5}$ (16%)	PNAs	$2 \times 10^{-4}$ (8%)
Bis(2-ethylhexyl)phthalate	$5 \times 10^{-5}$ (12%)	1,1-Dichloroethene <sup>a</sup>	$9 \times 10^{-5}$ (4%)
Arsenic	$4 \times 10^{-5}$ (11%)	Arsenic	$7 \times 10^{-5}$ (3%)
1,1,2-Trichloroethane	$1 \times 10^{-5}$ (<1%)	Tetrachloroethene <sup>c</sup>	$5 \times 10^{-5}$ (<1%)
Child Noncancer HI <sup>a</sup> = 2 to 9		Child Noncancer HI <sup>a</sup> = 7 to 23	
RME HI Drivers		RME HI Drivers	
Chemical <sup>b</sup>	HI	Chemical <sup>b</sup>	HI
Manganese	6 (67%)	Manganese	16 (70%)
1,2-Dichloroethene	1 (11%)	Vinyl chloride	4 (17%)
		1,2-Dichloroethene <sup>c</sup>	2 (9%)
<sup>a</sup> The range given is for the MLE and RME scenarios, respectively. <sup>b</sup> Exposures to these chemicals are via the ingestion pathway. <sup>c</sup> The incremental risk (i.e., site risk minus upgradient risk) is insignificant (i.e., cancer risk < $10^{-6}$ or HI < 1.0) for this chemical.			

### Risk Table - 3

#### Chemical Risk Drivers for the Deep Groundwater Pathways (Future Resident Population)

Deep Upgradient Groundwater		Deep Site Groundwater	
Adult Cancer Risk <sup>a</sup> = $2 \times 10^{-5}$ to $3 \times 10^{-4}$		Adult Cancer Risk <sup>a</sup> = $1 \times 10^{-5}$ to $2 \times 10^{-4}$	
RME Risk Drivers		RME Risk Drivers	
Chemical <sup>b</sup>	Risk	Chemical <sup>b</sup>	Risk
1,1-Dichloroethene	$3 \times 10^{-4}$ (82%)	1,1-Dichloroethene <sup>c</sup>	$2 \times 10^{-4}$ (99%)
Tetrachloroethene	$4 \times 10^{-5}$ (12%)	1,1,2-Trichloroethane <sup>c</sup>	$1 \times 10^{-5}$ (1%)
Bis(2-ethylhexyl)phthalate	$2 \times 10^{-5}$ (5%)	Tetrachloroethene <sup>c</sup>	$1 \times 10^{-5}$ (1%)
1,2-Dichloroethene	$2 \times 10^{-6}$ (1%)		
1,1,2-Trichloroethane	$1 \times 10^{-6}$ (<1%)		
Child Noncancer HI <sup>a</sup> = 2 to 7		Child Noncancer HI <sup>a</sup> = 3 to 14	
RME HI Drivers		RME HI Drivers	
Chemical <sup>b</sup>	HI	Chemical <sup>b</sup>	HI
Manganese	4 (57%)	Acetone	7 (50%)
1,2-Dichloroethene	1 (14%)	Manganese <sup>c</sup>	4 (29%)
Trichloroethene	1 (14%)		
<sup>a</sup> The range given is for the MLE and RME scenarios, respectively. <sup>b</sup> Exposures to these chemicals are via the ingestion pathway. <sup>c</sup> The incremental risk (i.e., site risk minus upgradient risk) is insignificant (i.e., cancer risk < $10^{-6}$ or HI < 1.0) for this chemical.			

**COST TABLE - 1**

**Capitol Cost Estimate for Alternative #2  
Institutional Controls and Engineered Barrier**

Item Description	Quantity	Unit	Unit Price	Cost	Subtotal
<b>Ground-water Monitoring Capitol Cost</b>					
Ground-water monitoring					
Ground-water Monitoring Capitol Cost (GMCC) Subtotal	0	0	\$0.00	\$0	\$0
Management Cost					
Design and Planning	15%	GMCC Subtotal	\$0	\$0	\$0
CQA/CM	25%	GMCC Subtotal	\$0	\$0	\$0
Contingency	15%	GMCC Subtotal	\$0	\$0	\$0
<b>Total Ground-water Monitoring Capitol Cost</b>					<b>\$0</b>
<b>Engineered Barrier Capitol Cost</b>					
Mobilization/Demobilization	1	lump sum	5%	\$30,307	
Site Preparation	1	lump sum	\$25,000	\$25,000	
Clearing, Grubbing, and Chipping	2.8	Acres	\$3,000	\$8,400	
Well Abandonment	410	ft	\$25	\$10,250	
Remove Utility Poles	4	Ea	\$500	\$2,000	
Remove Old Fence (not perimeter fence)	1	lump sum	\$1,500	\$1,500	
Remove & dispose of tires	1	lump sum	\$2,500	\$2,500	
Drum Consolidation	175	drums	\$50	\$8,750	
Former UST Excavation	840	Cu Yd	\$4	\$3,360	
Place Conc. Rubble in Excavation, Backfill	840	Cu Yd	\$8	\$6,720	
Dispose of Transformers	3	Ea	\$2,500	\$7,500	
Grading Layer (1% slope)	4,700	Cu Yd	\$15	\$70,500	
Geomembrane (40 mil HDPE)	122,000	Sq Ft	\$.48	\$58,560	
Geotextile (10 oz., non-woven)	122,000	Sq Ft	\$.25	\$30,500	
Granular Subbase (12 in sand)	6,900	ton	\$14	\$96,000	
Asphalt, (surface and base course) (8 in thick)	13,700	Sq Yd	\$20	\$274,000	
<b>Engineered Barrier Capitol Cost (EBCC) subtotal:</b>					<b>\$636,000</b>
Management Cost					
Design and Planning	15%	EBCC subtotal	\$636,000		\$95,000
CQA/CM	25%	EBCC Subtotal	\$636,000		\$159,000
Contingency	15%	EBCC Subtotal	\$636,000		\$95,000
<b>Total Engineered Barrier Capitol Cost</b>					<b>\$985,000</b>
<b>TOTAL ALTERNATIVE #2 CAPITOL COST</b>					<b>\$985,000</b>

## COST TABLE - 2

### Year One - O & M Cost for Alternative #2 Institutional Controls and Engineered Barrier

Item Description	Quantity	Unit	Unit Price	Cost	Subtotal
<b>Ground-water Monitoring Year 1 O&amp;M Cost</b>					
Ground-water Sampling	1	round	\$2,500	\$2,500	
Chemical Analysis	6	sample	\$1,500	\$9,000	
Data Analysis / Reporting	1	round	\$1,000	\$1,000	
Quarterly site inspection	4	round	\$1,000	\$4,000	
Deep Monitoring Well Replacement	0.3	well	\$10,000	\$3,300	
Shallow Monitoring Well Replacement	0.3	well	\$5,000	\$1,650	
Ground-water Monitoring year 1 O&M (GMY1) Subtotal					\$21,450
Contingency	25%	(GMY1) Subtotal			\$5,000
<b>Total Ground-water Monitoring Year 1 O&amp;M Cost</b>					<b>\$26,450</b>
<b>Engineered Barrier Year 1 O&amp;M Cost</b>					
Annual asphalt patching	1	lump sum	\$3,000	\$3,000	
FML replacement (including design & planning)	5%		\$201,708	\$10,085	
Asphalt replacement (including design & planning)	10%		\$356,200	\$35,620	
Engineered Barrier Year 1 O&M (EBY1) Subtotal					\$48,705
Contingency	25%	EBY1 subtotal	\$48,705		\$12,000
<b>Total Engineered Barrier Year 1 O&amp;M Cost</b>					<b>\$60,705</b>
<b>Total alternative 2 year 1 O&amp;M Cost:</b>					<b>\$87,155</b>

## COST TABLE - 3

SUMMARY AND TOTAL PRESENT WORTH COST	ESTIMATED COST
<b>TOTAL CAPITAL COST</b>	<b>\$985,000</b>
<b>PRESENT WORTH COST</b>	
Present Worth O&M Cost: Ground-water Monitoring	\$410,000
Present Worth O&M Cost Engineered Barrier	\$933,000
<b>TOTAL PRESENT WORTH O&amp;M COST</b>	<b>\$1,343,000</b>
<b>TOTAL PRESENT WORTH COST (Capitol + Total Present Worth O&amp;M Cost)</b>	<b>\$2,328,000</b>

ARAR - TABLE 1

Chemical Specific ARARs for Ground-water Media					
Authority	Requirement	Status	Prerequisite	Citation	Action to be Taken to Attain Requirement
Federal Regulatory Requirement	Safe Drinking Water Act of 1974 ("SDWA")	Relevant & Appropriate	Use of Ground-water in public water supply systems	40CFR 141.11-141.16 40CFR 141.50-141.51 40CFR 143.3	Remediate Ground-water by Monitored Natural Attenuation
	• MCLs				
	• MCLGs				
State Regulatory Requirement	• Secondary MCLS	Applicable	Ground-water is impacted	35IAC 620.410 unless modified in accordance with the substantive requirements of 35IAC 620.250 to 35IAC 620.420 or 35IAC 620.450	Remediate Ground-water by Monitored Natural Attenuation
	Illinois Ground-water Quality Standards				
State Regulatory Requirement	Establish a Ground-water Management Zone ("GMZ")	Applicable	Ground-water is impacted above Illinois Class I standards	35IAC 620.250	Apply for establishment of a GMZ



ARAR - TABLE 2

Chemical Specific ARARs for Air Media					
Authority	Requirement	Status	Prerequisite	Citation	Action to be Taken to Attain Requirement
State Regulatory Requirement	Discharge of air emissions	Applicable for Construction	Limitations for air emissions of organic material from stationary sources in other than Chicago and Metro East area counties	Ambient Air Quality Standard 50.6 35IAC Part 212 35IAC Part 215	Design, & monitor, construction to comply

ARAR - TABLE 3a

Action Specific ARARs - Impermeable Barrier					
Authority	Requirement	Status	Prerequisite	Citation	Action to be Taken to Attain Requirement
Federal Regulatory Requirement	<p>Placement of a cap over hazardous waste (e.g., closing a landfill, or closing a surface impoundment or waste pile as a landfill, or similar action) requires a cover designed and constructed to:</p> <ul style="list-style-type: none"> <li>o Provide long-term minimization of infiltration of liquids through the capped area. Function with minimum maintenance.</li> <li>o Promote drainage and minimize erosion or abrasion of the cover.</li> <li>o Accommodate settling and subsidence so that the cover's integrity is maintained.</li> <li>o Have a permeability less than or equal to the permeability of any bottom liner layer system or natural subsoils present.</li> </ul>	Relevant & Appropriate	<p>RCRA waste is covered with a cap for the purpose of leaving it behind after the remedy is selected.</p> <p>Significant management (treatment, storage, or disposal) of hazardous waste will make requirements applicable, capping without disturbance will not make requirements applicable, but technical requirements may be relevant and appropriate.</p>	RCRA, 40 CFR 264.228(a) (Surface Impoundments)	Design and construct impermeable barrier to comply
	Restrict post-closure use of property as necessary to prevent damage to the cover..	Relevant & Appropriate		RCRA 40 CFR 264.117(c)	Place institutional controls on future use to comply
	Prevent run-on and run-off damaging cover	Relevant & Appropriate		RCRA 40 CFR 264.228(b) 40 CFR 264.310(b)(4)	Design and construct impermeable barrier to comply

ARAR - TABLE 3b

Action Specific ARARs - Impermeable Barrier					
Authority	Requirement	Status	Prerequisite	Citation	Action to be Taken to Attain Requirement
Federal Regulatory Requirement	Disposal or decontamination of equipment, structures, and soil.	Relevant & Appropriate	Equipment exposed to contaminated materials.	RCRA 40CFR 264.111	Design and construct remedy to comply
Federal Regulatory Requirement	Stabilization of remaining waste and waste residues to support cover.	Relevant & Appropriate	Closure with waste left in-place	RCRA 40CFR 264.228(a)(2) & 40CFR 264.258(b)	Design and construct remedy to comply
Federal Regulatory Requirement	Stabilization of remaining waste and waste residues to support cover.	Relevant & Appropriate	Closure with waste left in-place	RCRA 40CFR 264.310(a)	Design and construct remedy to comply
Federal Regulatory Requirement	Post-closure care and ground-water monitoring	Relevant & Appropriate	Closure with waste left in-place	RCRA 40CFR 264.310(b)(1)(3)	Post-closure monitoring of remedy
Federal Regulatory Requirement	Develop fugitive and odor emission control plan for this action if existing site plan is inadequate	Relevant & Appropriate	Regrading of waste along the property boundaries in order to make physical room for the impermeable barrier	CAA, Section 101 and 40CFR 52	Design and construct remedy to comply
State Regulatory Requirement	File the substantive content of construction and operating permit application with state to include estimation of emission rates for each pollutant expected.	Applicable	This information is applicable to new emission sources.	35IAC 201.142 35IAC 201.143	File appropriate information following design & prior to construction
State Regulatory Requirement	Meet the 8 lb/hr rule for VOCs or install control equipment with greater than 85% control efficiency	Applicable	Sources emitting VOCs outside the Chicago Metropolitan Area.	35IAC 215.301 35IAC 215.302	Design and construct remedy to comply

ARAR - TABLE 3c

Action Specific ARARs - Impermeable Barrier						
Authority	Requirement	Status	Prerequisite	Citation	Action to be Taken to Attain Requirement	
Federal Regulatory Requirement	Include with construction substantive requirements application information the following: • Modeled impact analysis of source emissions • A Best Available Control Technology (BACT) review for the source operation	Applicable	Applicable to sources meeting the "major" source criteria per the Prevention of Significant Deterioration (PSD) Program in attainment areas.	CAA, 40CFR 52	File appropriate information following design & prior to construction	
Federal Regulatory Requirement	Verify that emissions of vinyl chloride and benzene do not exceed levels expected from sources in compliance with hazardous air pollution regulations.	Applicable		CAA, 40CFR 61*	Monitor emissions as appropriate	
State Regulatory Requirement	Procedure to exclude exposure routes from further consideration.	To Be Considered	Contaminated Soil or ground-water is present	35IAC 742.300 35IAC 742.305 35IAC 742.310 35IAC 742.315	Attach appropriate institutional controls onto property deed	
State Regulatory Requirement	Impermeable barrier is designed to prevent the infiltration of precipitation or other surface water, impede the ingestion or inhalation of contaminants.	To Be Considered	Placement of impermeable barrier to exclude exposure pathways.	35IAC 742.200	Design impermeable to comply & attach appropriate institutional controls to maintain	
State Regulatory Requirement	Establishes general nuisance noise control requirements for construction related activities	Applicable	Generation of noise during construction	35IAC 900.102	Design and monitor construction to comply	

ARAR - TABLE 4

Action Specific ARARs - Plugging and Sealing Drill Holes				
Authority	Requirement	Status	Prerequisite	Citation
State Regulatory Requirement	Establishes minimum requirements for plugging and sealing drill holes.	Applicable	Abandoning monitoring wells	35IAC 811.316
				Action to be Taken to Attain Requirement Abandon wells in compliance

ARAR - TABLE 5

Action Specific ARARs - Storm-water Management				
Authority	Requirement	Status	Prerequisite	Citation
Federal Regulatory Requirement	Storm-water management during construction	Applicable	Precipitation event during construction	40CFR 122.44
				Action to be Taken to Attain Requirement Design and implement construction to comply

ARAR - TABLE 6a

Action Specific ARARs - On-Site Treatment (e.g. SVE)					
Authority	Requirement	Status	Prerequisite	Citation	Action to be Taken to Attain Requirement
Federal Regulatory Requirement	Design system to provide odor-free operation	Applicable	Emission of gases from the SVE system	CAA 110* and 40CFR 52*	Design and operate system to comply
State Regulatory Requirement	File the substantive content of construction and operating permit application with state to include estimation of emission rates for each pollutant expected.	Applicable	This information is applicable to new emission sources.	35IAC 201.142 35IAC 201.143	File appropriate information following design & prior to construction
Federal Regulatory Requirement	Include with construction substantive requirements application information the following: o Modeled impact analysis of source emissions o A Best Available Control Technology (BACT) review for the source operation	Applicable	Applicable to sources meeting the "major" source criteria per the Prevention of Significant Deterioration (PSD) Program in attainment areas.	CAA, 40CFR 52	Submit required information
Federal Regulatory Requirement	Verify that emissions of vinyl chloride and benzene do not exceed levels expected from sources in compliance with hazardous air pollution regulations.	Applicable		CAA, 40CFR 61*	Design and operate system in compliance
State Regulatory Requirement	Meet the 8 lb/hr rule for VOCs or install control equipment with greater than 85% control efficiency	Applicable	Sources emitting VOCs outside the Chicago Metropolitan Area.	35IAC 215.301 35IAC 215.302	Design and construct remedy to comply
State Regulatory Requirement	Site specific remediation objectives may be obtained due to impracticability of remediation	To Be Considered	Extraction of contaminants from soils reaches asymptotic levels.	35IAC 742.920	Operate system to asymptotic levels, request acknowledgment that remedy segment is complete

ARAR - TABLE 6b

Action Specific ARARs - On-Site Treatment (e.g. SVE)					
Authority	Requirement	Status	Prerequisite	Citation	Action to be Taken to Attain Requirement
Federal Regulatory Requirement	Treatment of wastes subject to ban on land disposal must attain levels achievable by best demonstrated available technology (BAT) for each hazardous constituent in each listed waste.	Applicable	Disposal of residual wastes from the SVE system	RCRA, 40CFR 268	Manage waste to comply
Federal Regulatory Requirement	New treatment, storage, or disposal of hazardous waste prohibited. Placement of non-containerized or bulk liquid hazardous waste prohibited.	Applicable	Disposal of residual wastes from the SVE system	RCRA, 40CFR 264.18 <sup>b</sup>	Manage waste to comply
Federal Regulatory Requirement	RCRA permit-by-rule requirements must be complied with for discharges of RCRA hazardous waste to POTWs by truck, rail, or dedicated pipe.	Applicable	Discharge of treatment system effluent to a POTW	40CFR 270.60	Manage waste to comply
Federal Regulatory Requirement	<p>Pollutants that pass through the POTW without treatment, interfere with the POTW operation, or contaminate POTW sludge are prohibited. Specific prohibitions include discharges that:</p> <ul style="list-style-type: none"> <li>o Create a fire or explosion hazard in the POTW.</li> <li>o Are corrosive (pH&lt;5.0)</li> <li>o Are discharged at a flow rate and/or concentration that will result in interference.</li> <li>o Increase the temperature of wastewater entering the treatment plant that would result in interference; but in no case raise the POTW influent temperature above 104°F (40°C).</li> <li>o discharge must comply with local POTW pretreatment program, including POTW-specific pollutants, spill prevention program requirements, and reporting and monitoring requirements.</li> </ul>	Applicable	Discharge of treatment system effluent to a POTW	Federal Water Pollution Control Act, 40CFR 403.5	Design system, and manage waste streams destined to POTW to comply

ARAR - TABLE 6c

Action Specific ARARs - On-Site Treatment (e.g. SVE)					
Authority	Requirement	Status	Prerequisite	Citation	Action to be Taken to Attain Requirement
State Regulatory Requirement	Illinois Pretreatment Regulations provide pretreatment standards and instructions for pretreatment permits for all discharges to a POTW. Pretreatment standards will be established by the POTW in addition to the requirements of 35IAC 307, Subpart B. Pretreatment monitoring and reporting requirements are established during the permitting process. Permits are required from the Illinois EPA when the Illinois EPA is acting as the control authority; this regulation does not apply if the POTW is the control authority.	Applicable	Discharge of treatment system effluent to a POTW.	35IAC 307.1101-1103	Apply for pre-treatment discharge authorization to POTW and comply with conditions set for in the permit.
				35IAC 310.201-310.233	
				35IAC 301.400-310.444	
				35IAC 310.601-310.634	
State Regulatory Requirement	Prevent introduction of pollutants which will interfere with the operation of POTWs.	Applicable	Discharge of treatment system effluent to a POTW.	35IAC 201(a)(c) and 202 (this may be 301.63027)	Design and operate system to a manner to comply
Federal Regulatory Requirement	Sample preservation procedures, container materials, and maximum allowable holding times.	Relevant & Appropriate	Collection of samples for verification analysis.	40CFR 136	Conduct sampling in accordance with O&M Sampling Plan, QAPP, and this ARAR
State Regulatory Requirement	File the substantive content of construction and operating permit application with state to include estimation of emission rates for each pollutant expected.	Applicable	This information is applicable to new emission sources.	35IAC 201.142	Submit appropriate information as part of design and construction approval effort
State Regulatory Requirement	Meet the 8 lb/hr rule for VOCs or install control equipment with greater than 85% control efficiency	Applicable	Sources emitting VOCs outside the Chicago Metropolitan Area.	35IAC 215.301 35IAC 215.302	Design and construct remedy to comply
Federal Regulatory Requirement	Verify that emissions of vinyl chloride and benzene do not exceed levels expected from sources in compliance with hazardous air pollution regulations.	Applicable		CAA, 40CFR 61*	Monitor emissions as appropriate



# ARAR - TABLE 6d

Action Specific ARARs - On-Site Treatment (e.g. SVE)					
Authority	Requirement	Status	Prerequisite	Citation	Action to be Taken to Attain Requirement
Federal Regulatory Requirement	Include with construction substantive requirements application information the following: o Modeled impact analysis of source emissions o A Best Available Control Technology (BACT) review for the source operation	Applicable	Applicable to sources meeting the "major" source criteria per the Prevention of Significant Deterioration (PSD) Program in attainment areas.	CAA, 40CFR 52	Submit appropriate information as part of design and construction approval effort
State Regulatory Requirement	Air pollution regulations establish permit, monitoring and record keeping requirements for new air emission sources or air pollution control equipment. May be applicable for alternative requiring treatment systems which discharge to the atmosphere	Applicable	Operation of a new air emission source.	35IAC 201.141-201.151 35IAC 201.152-201.165 35IAC 201.281-201.283 35IAC 201.301-201.302 35IAC 201.401-201.408	Monitor emissions as appropriate, and maintain / submit records as required to comply and consistent with O&M Work Plan.
Federal Regulatory Requirement	Post-closure to ensure that site is maintained and monitored	Relevant & Appropriate	Operation & maintenance of the remedy	RCRA 40CFR 264.1118(a)(b)	Monitor closure as appropriate, and maintain / submit records as required to comply and consistent with O&M Work Plan.
State Regulatory Requirement	Establishes requirements limiting emission of noise beyond the property boundary.	Applicable	Operation of SVE blower system.	35IAC 900.102 35IAC 901.102 (a) & (b) 35IAC 901.106	Design & monitor system to comply
State Regulatory Requirement	Establishes requirements limiting emission of noise beyond the property boundary.	Applicable	Construction of SVE system.	35IAC 900.102	Design and monitor construction to comply

# ARAR - TABLE 6c

Action Specific ARARs - On-Site Treatment (e.g. SVE)					
Authority	Requirement	Status	Prerequisite	Citation	Action to be Taken to Attain Requirement
State Regulatory Requirement	Temporary On-Site Storage of RCRA Hazardous Waste from Treatment Residuals, or Other Sources: oEstablishes minimum requirements for general waste analysis oEstablishes minimum requirements for security oEstablishes minimum requirements for general inspection oEstablishes minimum requirements for personnel training oEstablishes general requirements for ignitable, reactive, or incompatible waste oEstablishes minimum requirements for arrangements with local authorities oEstablishes minimum requirements for site contingency plan, and emergency coordination and procedures oEstablishes minimum requirements for use and management of containers oEstablishes minimum requirements for tank systems	Applicable or Relevant and Appropriate	Disposal of condensate from the SVE system	35IAC 724.113(a)	Manage waste appropriately to comply
				35IAC 724.114	
				35IAC 724.115	
				35IAC 724.116(a)	
				35IAC 725.117(a)	
				35IAC 724.137	
				35IAC 724.151 through 724.156	
				35IAC 724.271, 35IAC 724.275, 35IAC 724.292	

- a - All of the Clean Air ARARs that have been established by the federal government may be covered by matching regulations. The state may have the authority to manage these programs through the approval of its implementation plans (40CFR 52 Subpart(O)).
- b - Bulk storage requires the preparation and implementation of a spill prevention, control, countermeasures (SPCC) plan [see 40 CFR 761.65(c)(7)(B) for specification of container sizes that are considered "bulk" storage containers].

ARAR - TABLE 7

Action Specific ARARs - Institutional Controls					
Authority	Requirement	Status	Prerequisite	Citation	Action to be Taken to Attain Requirement
State Regulatory Requirement	Describes institutional controls, and the use of ordinances as institutional controls.	To Be Considered	Placing institutional controls on a property	35IAC 742.1000 35IAC 742.1010 35IAC 742.1015	Utilize in structuring and applying institutional controls to site
State Regulatory Requirement	Restricts the installation of potable groundwater wells.	Applicable	Cannot be within 200 ft of primary or secondary source of contamination for clay and loam soils, or 400 ft for more permeable formations.	Illinois Dept. of Public Health, Illinois Water Well Construction Code, Section 920.50	Comply & monitor site for non-compliance by third parties
State Regulatory Requirement	Restricts the installation of potable groundwater wells.	Applicable	Cannot be within 400 ft of primary or secondary source of contamination in unconsolidated and unconfined sand and gravel formations.	Environmental Protection Act, Title IV, Section 14.1	Comply & monitor site for non-compliance by third parties
State Regulatory Requirement	Restricts the installation of potable groundwater wells.	Applicable	Public water supply wells must be free of contamination.	35IAC 653.118	Comply & monitor site for non-compliance by third parties
City Ordinance	Requires use of nearby potable public water supplies.	To Be Considered	Must be within 400 ft of public water supply.	City of Rockford, Water Division Ordinance, Section #31-10	Comply & monitor site for non-compliance by third parties
City Ordinance	Restricts the installation of potable groundwater wells.	To Be Considered	Restrict well installation into contaminated groundwater.	City of Rockford, Water Division Ordinance, Section #31-10	Comply & monitor site for non-compliance by third parties

**In the Matter of:**

**Interstate Pollution Control  
Superfund Site**

**Proposed Remedial Alternative**

**(Illinois EPA File No. 347-99)**

**Responsiveness Summary**

## **I. Responsiveness Summary Overview**

In accordance with the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") §117, 42 U.S.C. Section 9627, and National Contingency Plan §300.430(f)(3)(I)(F), and 300.430(f)(5)(iii)(B) the Illinois Environmental Protection Agency ("Illinois EPA") and the United States Environmental Protection Agency ("U.S. EPA") held a public comment period from July 10, 1999 September 10, 1999, to allow interested parties to comment on the "Proposed Plan - Interstate Pollution Control Site, Rockford, Illinois" (July 1999). Illinois EPA presented the Proposed Plan at an evening public meeting on August 10, 1999 at the Holley Center, 2000 Christina Street in Rockford, IL.

This responsiveness summary has been prepared to meet the requirements of CERCLA §113(k)(2)(iv) as amended by the Superfund Amendments and Reauthorization Act of 1986 ("SARA") which requires a response "... to each of the significant comments, criticisms, and new data submitted in written or oral presentations" on a Proposed Plan for remedial action. This responsiveness summary documents the Illinois EPA's responses to concerns expressed by the public, potentially responsible parties ("PRPs") and governmental bodies, in comments received regarding the proposed plan for the remedial action at the Interstate Pollution Control ("IPC") site. These comments were considered prior to selection of a final remedy for the IPC site. The remedy is detailed in Illinois EPA's Record of Decision ("ROD"), with U.S. EPA's concurrence.

### **Repository**

A local information repository was established in 1992 prior to commencement of the Remedial Investigation/Feasibility Study ("RI/FS") at the IPC site. This information repository is located at the Rockford Public Library, 215 North Wyman St. Rockford, IL. The information in this repository includes:

- Complaint (Civil Action No. 91C20136) People of the State of Illinois, V. 52 entities
- Partial Consent Decree for Remedial Investigation and Feasibility Study
- All Workplan documents
- Community Relations Plan for Remedial Investigation/Feasibility Study
- Remedial Investigation Report
- Feasibility Study Report
- Proposed Plan - Interstate Pollution Control Site, Rockford, Illinois

### **Administrative Record**

The complete administrative record is housed at the Rockford Public Library, 215 North Wyman St. Rockford, IL and at the Illinois EPA Bureau of Land - Division File, 1021 North Grand Avenue East, Springfield, IL.

## **II. Questions and Comments Received During the Public Meeting**

The public meeting was structured such that Illinois EPA gave an overview presentation of the proposed plan then opened the floor for a public question-and-answer and comment session. As a note three people attended the public meeting, all of which represented the Potentially Responsible Parties ("PRPs") for the site. For an exact transcription of the public meeting and the issues raised,

and addressed, during the meeting please refer to the attached Report of Proceedings taken at the hearing of the Interstate Pollution Control Superfund Site Proposed Remedial Alternative. The following summary questions/comments (presented in italics) were raised at the public meeting, followed by the Illinois EPA's summary response:

*Will operation of the soil vapor extraction ("SVE") system induce further migration of landfill gas (e.g. methane) from Peoples Avenue Landfill onto the IPC site?* This is a possibility and is the reason that the proposed plan contains a contingent option to not implement the SVE component of the remedy. The decision to not implement the SVE component would be made after the design effort pilot test and be based on demonstration of uncontrollable adverse impacts from landfill gas.

*Is the Illinois EPA aware of the plume of chlorinated organic solvents, moving from unidentified upgradient sources, toward the IPC site; and will the SVE component be expected to remediate these as they move under the site.* Yes we are aware of the upgradient plume; and no, the SVE component of this remedy is intended only to remediate volatile organics in soils at the IPC site thereby removing site contaminants as a source of ongoing contribution to groundwater contamination.

*Will the SVE remedy component have an adverse affect on the current anaerobic degradation of solvents which is occurring at the site?* There may be a change from anaerobic to aerobic vadose zone conditions however, there are recognized aerobic degradation mechanisms and in fact these aerobic mechanisms can actually benefit from the presence of certain organic substrates such as methane contained in the landfill gas.

*What is the Illinois EPA's intended schedule for execution of the Record of Decision ("ROD") and when will negotiations start on the Remedial Design/Remedial Action ("RD/RA") effort start?* It is our intention to complete this ROD by September 30, 1999 and open negotiations toward RD/RA immediately following.

*Would the Illinois EPA accept information from outside sources to support the identification of Potentially Responsible Parties for the RD/RA effort?* Yes.

### **III. Written Comments Received During the Public Comment Period**

Technical comments on the Proposed Plan were received from representatives of the PRP group during the public comment period and are summarized in italics below, followed by the Illinois EPA's response.

*A series of comments challenged the Proposed Plan's indication that "principal threat" wastes remain at the site following past removal actions.* The Illinois EPA acknowledges the positive benefits of the removal actions and agrees that "principal threat" wastes do not remain at the site. The ROD reflects this acknowledgment.

*An assessment of soil data, gathered during the RI, utilizing the approach contained in the Illinois EPA's Tiered Approach to Cleanup Objectives ("TACO") 35 LAC Part 742 was provided*

*as a comment. This assessment indicates that the on site volatile organic compounds ("VOCs") currently represent a threat to industrial and commercial workers via the inhalation pathway; additionally this assessment indicates that, following construction of the impermeable barrier no VOCs represent a source of further contamination of groundwater.* The Illinois EPA has reviewed this assessment of data and acknowledges the information presented. As TACO is not an Applicable or Relevant and Appropriate Requirement ("ARAR") for this action, but rather information that should be considered in the analysis of a site (commonly known as To Be Considered) the final selection of a remedial option cannot be based solely on this analysis; however the TACO analysis presents a reasonable case that the SVE component of the remedy may not be required to remove the ongoing source of groundwater contamination. In acknowledging this comment the Illinois EPA has selected Alternative #2 as the preferred remedial action while maintaining the SVE component of Alternative #3 as a contingent remedy enhancement if protection of groundwater is not demonstrated during each five year review cycle.

*A series of comments provide opinion that site soils may not represent a significant past or future contributor to groundwater contamination and any positive benefits from the SVE component of the remedy could be negated by movement of recognized upgradient groundwater sources of chlorinated solvents under the site.* The Illinois EPA appreciates the concern however does feel that the site, as it currently exist, is a source of groundwater contamination. In fact the TACO analysis substantiates that the site, in it's current uncontained situation, is a potential source of VOC's to groundwater. As to concern that upgradient sources may negate the positive benefits of the SVE component, this concern is out weighted by the ability to remove sources of potential groundwater contamination.

*Several comments reiterated and expanded on the concerns relative to inducement of landfill gas ("LFG") migration onto the IPC site and it's potential impacts on the SVE component.* Illinois EPA has previously acknowledged this concern in the proposed plan and believes that both the proponent and contraindicating positions are both speculative absent the performance of a pilot test to support design and selection of operational parameters for an SVE system. The Illinois EPA has maintained the SVE component as a contingent remedial option with the implementation decision dependent upon performance of an adequately designed pilot test definitively verifying an inability to safely implement the SVE component.

BEFORE THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF: )  
INTERSTATE POLLUTION CONTROL ) Illinois  
SUPERFUND SITE PROPOSED ) EPA FILE #347-99  
REMEDIAL ALTERNATIVE. )

REPORT OF PROCEEDINGS taken at the  
hearing of the above-entitled matter, held at  
2000 Christina Street, Rockford, Illinois,  
before Hearing Officer John Williams, reported by  
Janice H. Heinemann, CSR, RMR-CRR, a notary public  
within and for the County of Du Page and State of  
Illinois, on the 10th day of August, 1999,  
commencing at the hour of 7:00 p.m.

APPEARANCES:

MR. JOHN WILLIAMS, IEPA Hearing Officer;

MR. RICH LANGE, Bureau of Land, Division of  
Remedial Management, National Priorities  
List, Project Manager;

MR. MARK BRITTON, Community Relations.



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1 HEARING OFFICER WILLIAMS: Let the record  
2 show that this is a public hearing before the  
3 Illinois Environmental Protection Agency in the  
4 matter of Interstate Pollution Control Superfund  
5 Site Proposed Remedial Alternative. Illinois EPA  
6 File No. 347-99.  
7 Good evening, ladies and gentlemen.  
8 Welcome to this hearing. My name is John Williams,  
9 and I'm the hearing officer for these proceedings.  
10 I will introduce the other members of the Illinois  
11 Environmental Protection Agency, Illinois EPA.  
12 staff at the conclusion of this statement.  
13 This hearing is being held by the  
14 Illinois EPA Bureau of Land, BOL, Federal Site  
15 Remediation Section for the purpose of providing an  
16 opportunity for the public to understand and  
17 comment on the proposed remedial alternatives for  
18 the Interstate Pollution Control Superfund Site  
19 located in the southeast Rockford area of Winnebago  
20 County, Illinois.  
21 The hearing is being held under the  
22 provisions of the Illinois EPA Procedures for  
23 Informational and Quasi-legislative Hearings, 35  
24 Illinois Administrative Code, part 164. Copies of

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1 the procedures can be obtained from me upon  
2 request.  
3 After the presentation by the speakers  
4 for the Illinois EPA Bureau of Land, who will  
5 describe the proposed remedial alternatives, and  
6 the public question period, any person who wishes  
7 to make oral comments, that is, testify, may do so  
8 as long as the states are relative to the issues  
9 which are being addressed at the hearing; and they  
10 have indicated that they wish to comment on their  
11 registration card.  
12 Persons asking questions or making  
13 comments will initially be limited to five minutes  
14 until everyone who wishes to ask questions or make  
15 comments has had a chance to speak. If you have  
16 lengthy comments to make, please submit them to me  
17 in writing before the close of the comment period  
18 and I will ensure that they are included in the  
19 hearing record as exhibits. There are also public  
20 comment forms at the registration table for your  
21 convenience if you wish to use these. Otherwise,  
22 comments written on standard 8.5 by 11-inch paper  
23 will be acceptable.  
24 A 30-minute question period will be

Page 4

1 allowed after the Illinois EPA's speakers have made  
2 their presentations. The hearing officer may limit  
3 the number of questions per person until everyone  
4 has had a chance to speak. This question period  
5 may be extended, if necessary, by the hearing  
6 officer. Also, a further question period may be  
7 allowed after all the public comments have been  
8 made if time permits.  
9 Those persons asking questions or  
10 making comments will, first, please state their  
11 name and, if applicable, any governmental body,  
12 association or organization that they represent for  
13 the hearing record. If you are representing  
14 yourself only, you can state that you are an  
15 interested citizen or an area resident.  
16 Questions asked of the speakers must,  
17 firstly, be framed as a question; second, relevant  
18 to the subject presented; and third, not  
19 repetitious. Arguing or dialogue with any speaker  
20 will not be allowed. Questions will be directed to  
21 the hearing officer, that is, myself; and I will  
22 then direct the speaker to respond as necessary.  
23 The Illinois EPA will listen to all  
24 relevant comments and accept all relevant documents

Page 5

1 or data as exhibits into the hearing record. Once  
2 the hearing is adjourned today, I will hold the  
3 hearing record open until September the 10th, 1999.  
4 During this time, all relevant written  
5 comments, documents or data will be accepted and  
6 entered into the hearing record as exhibits.  
7 Please send all written comments,  
8 documents or data to John Williams, No. 21,  
9 Illinois Environmental Protection Agency, 1021  
10 North Grand Avenue East, Post Office Box 19276,  
11 Springfield, Illinois, 62794-9276.  
12 Written comments need not be notarized  
13 as to the facts asserted and should be postmarked  
14 on or before midnight September the 10th, 1999.  
15 Copies of the hearing agenda, public comment forms,  
16 are available for your record at the registration  
17 area. Anyone who fills out a registration card  
18 will receive a copy of the Responsiveness Summary,  
19 the Agency's response to public comments and final  
20 decision when this document becomes available.  
21 Please check the box on the registration card if  
22 you wish to make oral comments. If you wish to  
23 make oral comments but have a time constraint,  
24 please let the Agency staff at the registration

1 table know, and I will endeavor to call upon you to  
2 testify as early as possible.

If you require any further information  
4 after this hearing is over, please contact me at  
5 telephone number area code 217-782-5544 or Mark  
6 Britton at area code 211-524-7342. The telephone  
7 number for anyone who is hearing impaired, that is,  
8 the TDD number, is area code 217-782-9143 and we  
9 will be glad to help you.

10 Because a verbatim record of this  
11 hearing is being made, I would request that you  
12 keep conversation and noise levels to a minimum so  
13 that the court reporter can hear and transcribe the  
14 proceedings.

15 On behalf of Director Thomas V.  
16 Skinner, the Illinois EPA staff present, and  
17 myself, I wish to thank you for attending and your  
18 participation at this hearing.

19 I shall now introduce the Illinois  
20 EPA staff present. My name is John Williams, and  
21 I'm the hearing officer for the Illinois EPA. On  
22 my left is Rich Lange, Bureau of Land, Division of  
23 Remedial Management, National Priorities List. And  
24 he's the project manager for this project

1 concerning Interstate Pollution Control Superfund  
2 Site. On my right is Mr. Mark Britton, Community  
3 Relations, who is the community relations officer  
4 for this project and for this area concerning this  
5 matter.

6 At this time I will introduce  
7 Mr. Rich Lange, who will give a presentation on the  
8 proposed alternatives by the Illinois Environmental  
9 Protection Agency Bureau of Land.

10 HEARING OFFICER WILLIAMS: Go ahead,  
11 Mr. Lange.

12 MR. LANGE: This presentation can be  
13 extremely brief or we can go through it step by  
14 step. Since the three people in attendance are  
15 functioning counterparts with the Interstate  
16 Pollution Control Potentially Responsible Parties  
17 Committee and prepared the bulk of the original  
18 documents from which my overheads were plagiarized,  
19 I really see no need to go through them at length.  
20 If you want to see the show, I can give it to you  
21 but --

2 MR. MOYER: Not unless anything is changed  
23 I mean.

24 MR. LANGE: I have changed nothing, Scott.

1 MR. MOYER: Okay.

2 MR. LANGE: In fact, all of the overheads  
3 are taken directly out of the Feasibility Study.

4 MR. MOYER: Okay. I don't need to see  
5 them.

6 MR. LANGE: And I thank Montgomery Watson  
7 for providing such nice material to work with.

8 The gist of it is Interstate Pollution  
9 Control respondents performed the Feasibility Study  
10 under Illinois EPA's oversight. That Feasibility  
11 Study resulted in three alternatives, the no action  
12 beyond maintenance of existing institutional  
13 controls alternative; institutional controls and an  
14 engineered barrier, Alternative 2; and the  
15 institutional controls and engineered barrier and  
16 soil vapor extraction, SVE.

17 The common elements of the three  
18 alternatives include maintaining existing  
19 institutional controls, a deed restriction  
20 prohibiting residential development and maintenance  
21 of the site security fence. Additionally,  
22 Alternatives No. 2 and No. 3 include the common  
23 element of further institutional controls,  
24 including additional deed restrictions to ensure

1 protection of construction workers during future  
2 on-site excavation by requiring OSHA training of  
3 construction workers, appropriate health and safety  
4 plans during construction activities, compliance  
5 with ARARs relative to soil management, and further  
6 obligating adherence to existing enforced local  
7 and -- I left it out of the proposed plan, but  
8 there is also -- state groundwater use  
9 restrictions. So those are the common elements of  
10 Alternatives 2 and 3.

11 The Risk Assessment conducted as a  
12 portion of the Remedial Investigation Feasibility  
13 Study process, as required by the NCP, indicated  
14 that Alternative 1 did not sufficiently mitigate  
15 the risk and was rejected and was not considered as  
16 a viable option for selection as a final remedy.

17 Alternative 2, the institutional  
18 controls and the engineered barrier, the array of  
19 common elements, institutional controls and an  
20 engineered barrier consisting of a impermeable  
21 geosynthetic liner overlain by asphalt pavement.  
22 The barrier will be graded to promote drainage.  
23 Groundwater contamination beneath the IPC site will  
24 be remediated over time through monitored natural

1 HEARING OFFICER WILLIAMS: Yes. Could you  
2 state your name and who you represent.

3 MR. DIKINIS: Jon Dikinis. I'm with  
4 Dikinis Consulting, Inc.

5 HEARING OFFICER WILLIAMS: Yes.

6 MR. DIKINIS: And I represent the IPC  
7 steering committee.

8 HEARING OFFICER WILLIAMS: Okay. Go ahead.

9 MR. DIKINIS: I just have a simple  
10 question. Is the State doing anything with  
11 People's Avenue Landfill to control gas?

12 MR. LANGE: There is no active effort to  
13 control gas there, Jon, to my knowledge. I believe  
14 there are some investigative activities, current  
15 status of potential progress, no knowledge. We can  
16 get some more information out of Springfield for  
17 you if you are interested in that.

18 HEARING OFFICER WILLIAMS: Any more  
19 questions?

20 MR. MOYER: Any more?

21 MR. DIKINIS: No. I don't have any right  
22 now. I'm trying to think of a few.

23 MR. MOYER: Okay. My name is Scott Moyer.  
24 I'm with Hamilton Sunstrand. I am the chair of the

1 technical committee for the PRPs. I guess my  
2 question would revolve around the pilot test in  
3 that what does the Agency envision would be a  
4 representative test for this site in terms of  
5 duration, time of year, pumps, equipment, whatever  
6 is needed.

7 MR. LANGE: Generally the design of a pilot  
8 test would be left to those people familiar with  
9 the design and implementation of SVE remedies.  
10 There is no Illinois EPA standard operating  
11 procedure for implementation of soil vapor  
12 extraction pilot tests. If the project remains  
13 that of Rich Lange, which I conjecture it probably  
14 will for some period of time, I would expect  
15 whoever the design contractor for remedying  
16 implementation to propose a pilot test for our  
17 review and approval. That would include not only  
18 number of wells, location of wells specific to the  
19 site, if there are believed to be seasonality  
20 influences, it should all be incorporated into the  
21 proposal, which would be submitted for Agency  
22 review and approval. You know, you design a pilot  
23 test, you implement the pilot test, and you use  
24 that information to design the full-scale soil

1 vapor extraction system. I would expect review and  
2 approval of the pilot test design documents,  
3 oversight of the pilot test, and review and  
4 approval of the ultimate design if it's found to be  
5 practical.

6 MR. MOYER: A second question.

7 HEARING OFFICER WILLIAMS: Yes, go ahead.

8 MR. MOYER: Scott Moyer again. Would the  
9 pilot test be based on this air curtain injection  
10 that you propose that it's currently running as the  
11 SVE is being done?

12 MR. LANGE: It would be conjecture on my  
13 part. But in discussion with more than one expert,  
14 I would anticipate a pilot test that I could  
15 support would be done with one or more extraction  
16 wells ran without the vacuum breaker, the air  
17 relief system in place for a period of time. And  
18 those are sometimes hours, sometimes a few days,  
19 but very seldom longer than a couple days. Then  
20 install the vacuum breaker passive air/active air  
21 injection component, perform a second blower test  
22 on the same well, and look at the results for  
23 ultimate decision.

24 It may be that the concern of landfill

1 gas encroachment and migration is overstated. It  
2 may be that it's understated. It may be that with  
3 proper operational parameters on an SVE extraction  
4 system we don't need this vacuum breaker system.  
5 It may be that we do. We are going to have to look  
6 at both components I believe independently to  
7 really tell -- or both steps independently, with  
8 and without, to make a logical decision.

9 MR. MOYER: Question three.

10 HEARING OFFICER WILLIAMS: Go ahead.

11 MR. MOYER: What I understand from the  
12 regional contamination within the area other than  
13 IPC is that it was estimated that there is a  
14 groundwater plume approaching IPC from the Matteson  
15 or Madison -- I forget what it is -- machine works  
16 facility. And that with an SVE system in place,  
17 I'm concerned that we are going to get into pilot  
18 tests that may not represent what the future may  
19 hold in terms of what they are pulling off the  
20 groundwater in the future in the Vadose zone.

21 MR. LANGE: There is what you are talking  
22 about, Jon, or one drawing of it. We acknowledge  
23 its existence. The State does not intend to  
24 remediate groundwater with this SVE component. We

1 are looking for the SVE only to approach soil  
2 contaminants. If it's under operation of the SVE  
3 system, it becomes apparent that the soils have  
4 been remediated and it's an ongoing groundwater  
5 source. I suspect that the ROD will be written in  
6 such a fashion as to call a stop to it. If it's  
7 not, it would be appropriate at that point for  
8 somebody to come in and present some evidence and  
9 convince us that a ROD amendment is appropriate,  
10 that we are no longer remediating volatile  
11 contaminated soils, but we are remediating volatile  
12 contaminated groundwater.

13 MR. MOYER: Right.

14 MR. LANGE: Which is not going to be the  
15 intent of this ROD. It's not the intent of the  
16 proposed plan. If we were remediating groundwater  
17 with no remediation of soils component, we would be  
18 in noncompliance with the Record of Decision or at  
19 least in noncompliance with the proposed plan which  
20 is essentially going to be the Record of Decision  
21 barring public comment that sways our current  
22 preference.

23 HEARING OFFICER WILLIAMS: Any more  
24 questions?

1 MR. MOYER: I may, but I'm waiting for Jon.

2 MR. LANGE: Walter, you have got to have at  
3 least one question to validate your existence.

4 MR. BUETTNER: Not yet.

5 MR. MOYER: Well, I -- This may not be a  
6 question, but it's more of a comment.

7 MR. LANGE: That's all right.

8 MR. MOYER: For SVE and for the pilot test,  
9 I'm concerned that you may potentially enter carbon  
10 units for air emission, and that if that should  
11 occur that the methane with its chemical make-up as  
12 it is it's much more mobile than the chlorinated  
13 components of the soil vapor gas, and it doesn't  
14 take a lot of history to tell you that methane will  
15 really mess up a carbon unit a lot quicker than  
16 soil vapor extraction. That's the big concern I  
17 have with methane in terms of if we actually get  
18 into carbon units with this thing.

19 The second thing I have a concern with  
20 is that if it goes to air injection it can  
21 potentially turn this anaerobic environment into  
22 aerobic especially in the winter months. And with  
23 chlorinated solvents, they do break down more  
24 readily in an anaerobic environment. So if I

1 introduce oxygen to the area, I have reduced my  
2 effectiveness of removing chlorinated solvents due  
3 to partition coefficients, whatever is left on the  
4 soil, because the anaerobic bugs are not chewing  
5 them away. And I can understand that that is  
6 potentially occurring now because I have  
7 sister-and-daughter breakdown components in the  
8 soil as it is. So I don't know -- honestly don't  
9 know what that may hold in the future.

10 MR. LANGE: I will --

11 MR. MOYER: I don't know if a pilot test  
12 for two days will show that, and that's what I'm  
13 concerned about.

14 MR. LANGE: I will offset that by personal  
15 experience. TCA, TCE and perchloroethylene do  
16 degrade in an aerobic environment, that they do  
17 deplete soil oxygen and generate carbon dioxide  
18 along with the breakdown products. There was no  
19 attempt in the RI to validate any of this  
20 information. It's a new concern, was not presented  
21 in the evaluation of the alternatives in the FS or  
22 validated in the RI to my knowledge. It is a  
23 concern. It's a matter of record. We will put it  
24 into the consideration of the SVE component of the

1 remedy, Scott.

2 MR. MOYER: Anaerobic -- Anaerobic  
3 degradation has to be occurring here because of  
4 essentially vinyl chloride showing up. I don't  
5 know if that's important right now, and it probably  
6 isn't. But I don't know what that's going to do if  
7 I introduce a more free-flowing system with  
8 introducing oxygen.

9 MR. LANGE: Yes. And I'm not sure, Scott,  
10 that this will be an active air injection system or  
11 a passive air injection system. I have been led to  
12 believe that passive air might be sufficient just  
13 on a thumbnail guess. That would depend a lot on  
14 the gas permeabilities of the soil and so on, which  
15 would be a component of data collection during the  
16 pilot test study design.

17 MR. MOYER: Can I ask Jon a question real  
18 quick?

19 (Discussion outside the record.)

20 MR. DIKINIS: This might be a two-part  
21 question. Rich, you are talking about the  
22 upgrading groundwater plumes. And if I understand  
23 you correctly, you are saying that, okay, we  
24 recognize that we have a long-term groundwater

1 problem. So really the test of SV efficiency is  
2 going to be in the soil, not, you know, beneficial  
3 impact on groundwaters as you have these plumes  
4 coming through, but what's left in the soils.

5 MR. LANGE: That is the intent of the  
6 remedy selection, Jon, is to remove the sink source  
7 to groundwater -- further groundwater contamination  
8 at the IPC site, not to remediate groundwater with  
9 this remedy but to remediate those soils,  
10 chlorinated solvents in particular, to reduce their  
11 rebound and continued source contamination  
12 groundwater.

13 MR. DIKINIS: So the second part of my  
14 question, I know you were wrestling with this, is  
15 how are you going to judge, you know, what  
16 standards are going to apply? Or what do you see  
17 are the logical, you know, criteria for soil  
18 cleanup?

19 MR. LANGE: There are two alternatives  
20 that I believe are available. They have not a  
21 clean-up objective, as it were, has not been set.  
22 I will be going in the very near future to or what  
23 used to be called clean-up objectives team, it's  
24 got a new name now, to discuss this issue with

1 them. I would propose to them that we go for  
2 asymptotic removal rates on the gases coming out of  
3 the SVE blowers. When we have achieved that  
4 asymptotic removal, we shut the system off some  
5 period of time, one month, three months, six  
6 months, turn it back on and look for rebound.  
7 Generally you will experience one or more rebounds  
8 on an SVE system. When our rebounds are  
9 insignificant, we will be done.

10 Another alternative that's far less  
11 preferable to me is to set some soil numbers after  
12 we have achieved asymptotic gas removal, going  
13 through the rebound sequence the number of  
14 iterations of whatever is appropriate, determined  
15 on the performance on the removals, and then do a  
16 soil sampling verification of that to some federal  
17 or state senate numbers. That's the least  
18 preferable to me. Those are the two clean-up  
19 objectives that I see coming out driving the SVE  
20 remedy, Jon. My preference would be to go to  
21 asymptotic removal, shut down, look for rebound,  
22 and until we get to a point of diminishing return  
23 stay in that sequence.

24 MR. DIKINIS: I have another question.

1 HEARING OFFICER WILLIAMS: All right.

2 MR. DIKINIS: Let's say after the pilot  
3 test the system needs to be supplemented with  
4 vacuum relief or other safeguards. Is there  
5 anything in mind that would change the cost  
6 effectiveness equation? I mean we are already in  
7 the Feasibility Study. You are looking at an  
8 incremental cost of \$2.3 million to deal with, you  
9 know, VOCs in soils. Is there anything that would  
10 trigger a reevaluation of cost effectiveness if the  
11 costs go up significantly?

12 MR. LANGE: There is guidance on  
13 substantial cost changes from the remedy as  
14 proposed in the proposed plan, validated in the  
15 ROD. Exactly what that number is I don't recall.  
16 That would be one trigger. There are probably  
17 others that do not come to mind, Jon.

18 It's not uncommon as a remedy design  
19 progresses for anybody, anybody, to come up with a  
20 new mousetrap that will achieve the same arithmetic  
21 mitigation better or at a substantially reduced  
22 cost. And those can be incorporated in a ROD  
23 amendment or an explanation of significant  
24 difference depending on the magnitude of the remedy

1 change. The State, U.S. EPA, is not opposed to a  
2 new mousetrap that will mitigate risk and treat --  
3 remove contaminants from the site. We want to  
4 reduce the time period of the natural attenuation,  
5 and we see as an ongoing source of material here,  
6 as a continuing -- a continuing source of  
7 groundwater contamination, which can be gotten hold  
8 of.

9 But we move forward on this Record of  
10 Decision, this proposed plan through public comment  
11 through a Record of Decision, and at some point  
12 after that somebody comes up with a new and  
13 marvelous idea that will achieve those goals at  
14 less cost or more convenience or whatever the  
15 advantage is, it's totally within anybody's rights  
16 to request a revisit of a ROD. I think -- I don't  
17 know that we could just carte blanche deny  
18 reviewing and seriously considering an alternative  
19 remedy.

20 HEARING OFFICER WILLIAMS: Yes, go ahead.

21 MR. BUETTNER: Walter Buettner with  
22 Montgomery Watson. Rich, you -- In the SVE  
23 system, if I recall correctly, you envisage that  
24 the pilot system would initially consist of running

1 the system with one or two extraction wells for a  
2 couple days and then installing the vacuum release  
3 system and running it for a couple days?

4 MR. LANGE: Along that general line, yes,  
5 Walter.

6 MR. BUETTNER: As a comment, it would  
7 appear to me that right now according to the RI  
8 that methane from People's Avenue Landfill seems to  
9 be approaching the boundaries of the IPC site or it  
10 may have already reached it.

11 MR. LANGE: Yes.

12 MR. BUETTNER: And as an engineer, I would  
13 be concerned that running a pilot test for only one  
14 or two days may not give you enough air flow  
15 through the soil to determine whether or not you  
16 actually truly are inducing more migration of  
17 methane onto the site. It may have to run for  
18 considerably longer. And my concern, of course, is  
19 that running in that direction, as you stated  
20 earlier, if you actually draw methane onto the  
21 site, you have essentially -- You have let the cat  
22 out of the bag already. Once the methane is on the  
23 site and you have induced it on the site, you have  
24 a problem there already from the operation of the

1 SVE system from future operation.

2 So again, it's more of a comment right  
3 now. I would like to get your response, though.  
4 What are your thoughts on the length of time and  
5 have we potentially caused a worse probably running  
6 the pilot test in such a way that it could  
7 potentially induce more methane onto the site?

8 MR. LANGE: The specific parameters of the  
9 pilot tests I would defer to those people who  
10 design pilot tests. There will logically be a soil  
11 sampling regime looking for gas permeabilities of  
12 soils, so on and so forth. Prior to installation  
13 of the SVE well, those who are knowledgeable at  
14 designing SVE systems and SVE pilot systems can  
15 project within reasonable limits the areas of  
16 influence that they expect. You put in a series of  
17 gas piezometers, fire up the blower, and look for  
18 influence at distance. With that information, you  
19 can model the final design.

20 If the preliminary model outputs in  
21 the design of the pilot test would indicate that  
22 three days is better than two or five days is  
23 better than two or nine days is better than two or  
24 representative, more likely to avoid false

1 positives or false negatives, which would have to  
2 seriously look at that information. I am not going  
3 to as a project manager supersede a design  
4 consultant's request to gather information which  
5 would possibly result in a faulty design and a  
6 faulty remedy.

7 I don't think that a small quantity  
8 of soil methane, soil gas containing methane,  
9 methane only, induced flow into the IPC site is  
10 letting the genie out of the bottle. If somebody  
11 feels otherwise and can validate that with  
12 experience, with published reports, whatever, I  
13 will listen to it and entertain it. But I don't  
14 think five or ten parts per million or five or ten  
15 percent methane on a short period of time -- You  
16 have to realize methane is also very biodegradable.  
17 Certain of the aerobic and anaerobic biodegradation  
18 regimes that are out there actually use methane as  
19 a cometabolite to enhance biodegradation of  
20 chlorinated solvents. So we bring it over there,  
21 it ain't going to last very long, personal opinion.  
22 If you have got information to validate otherwise,  
23 then put it into the soup.

24 MR. MOYER: Real quick question.

1 HEARING OFFICER WILLIAMS: Go ahead.

2 MR. MOYER: When is the Record of Decision  
3 going to come out? When are you going to notice  
4 PRPs, and when do you feel the time frame is going  
5 to kick in for the next start of the RI phase?

6 MR. LANGE: Our intention currently is to  
7 issue a Record of Decision yet this federal  
8 quarter, September 30. On the -- It used to be  
9 SPMMS. I'm not sure what the name for that is  
10 either, but we have an RDRA negotiation start  
11 October 1. So we will be coming to those people  
12 that served on the last committee for aid and  
13 succor in gathering up any more PRPs, we may or --  
14 may do any additional PRP work and we may open up  
15 negotiation to those who will step forward and are  
16 willing to talk to us. So it's conceivable we  
17 could be into preliminary design work in spring if  
18 we can get reasonable movement on negotiation and a  
19 decree.

20 MR. MOYER: One last thing I think. The  
21 current IPC PRP group would be willing to assist  
22 you in the names and addresses of those individuals  
23 we feel are responsible for the site. And I only  
24 say that because names of companies have come and

1 gone since the original PRP search, and they may  
2 not be the same. And some, in fact, have gone out  
3 of business. So I think of the PRP group that  
4 currently exists, they have the most factual  
5 information they would be willing to share with the  
6 Agency in terms of potential liability to this  
7 site.

8 MR. LANGE: We would look forward to that  
9 assistance.

10 MR. MOYER: I'm just asking you to give me  
11 a call when that comes to be.

12 MR. LANGE: When we have our RDRA  
13 negotiations start October 1, probably about  
14 October 2 or 3 I will give you a call, Scott.

15 MR. MOYER: Okay. Sounds good.

16 MR. LANGE: And if it includes enough  
17 support information for our attorneys to go knock  
18 on those people's doors, we'll take good  
19 information from wherever we can get it.

20 MR. MOYER: Okay.

21 HEARING OFFICER WILLIAMS: Okay. Any more  
22 questions?

23 (No response.)

24 HEARING OFFICER WILLIAMS: Any other

1 comments?

2 (No response.)

3 HEARING OFFICER WILLIAMS: Okay. There  
4 being no further questions or comments, I'm going  
5 to proceed to close the hearing.

6 The hearing record will remain open  
7 until September the 10th, 1999, for written  
8 comments. Written comments need not be notarized,  
9 as I have said, should be postmarked by midnight  
10 September 10, 1999, mailed to myself. My name and  
11 address appear on the copies of hearing agenda, and  
12 they are also on the comment forms there. So if  
13 you wish to take those and use them to send in your  
14 comments, I would appreciate it.

15 And thank you very much on behalf of  
16 our Director for coming here to this hearing this  
17 evening and for your information and all your  
18 participation in the hearing. Thank you. Hearing  
19 is now closed. Records remain open until  
20 September the 10th.

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STATE OF ILLINOIS

2 COUNTY OF DU PAGE )

7 I, JANICE H. HEINEMANN, CSR, RMR-CRR,  
8 do hereby certify that I am a court reporter doing  
9 business in the State of Illinois, that I reported  
10 in shorthand the testimony given at the hearing of  
11 said cause, and that the foregoing is a true and  
12 correct transcript of my shorthand notes so taken  
13 as aforesaid.

Janice H. Heinemann, CSR, RMR-CRR

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